

				<p>38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
281	HSLHG78	695	Production of IL-6	<p>IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred</p>

				<p>(IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test</p>	<p>embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly</p>
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			<p>immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia,</p>
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				hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
281	HSLHG78	695	Production of MCP-1	<p>MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be</p> <p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) MCP-1 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MCP-1 production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders").</p>



			<p>used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis (bacterial and viral), Lyme Disease, asthma, and allergy Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers,</p>
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281	HSLHG78	695	Production of MIP1alpha	<p>MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of</p>	<p>such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p> <p>A highly preferred embodiment of the invention includes a method for stimulating MIP1a production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MIP1a production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis,</p>
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				<p>monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or</p>	<p>systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma, and allergy. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers,</p>
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				cytokines, initiate and upregulate T cell proliferation and functional activities.	such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
282	HSLHX15	696	HLA-DR in Human T cells		
282	HSLHX15	696	SEAP in OE-21		
282	HSLHX15	696	SEAP in UMR-106		
283	HSNAP85	697	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications

				<p>activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other</p>
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					preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
284	HSNAZ09	698	Upregulation of CD154 and activation of T cells	CD154 FMAT. CD154 (a.k.a., CD40L) expression is induced following activation of T cells. Interaction between CD154 and	A highly preferred embodiment of the invention includes a method for activating T cells. An alternative highly

				<p>CD40 on B cells is required for correct antibody class switching and germinal center formation. Mutations in CD154 are linked to immunodeficiencies and increased susceptibility to infections. Assays for immunomodulatory proteins important for antibody class switching and TH1 function and expressed on activated T helper lymphocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, modulate antibody class switching, mediate TH1 function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD154, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and</p>	<p>preferred embodiment of the invention includes a method for inhibiting the activation of and/or inactivating T cells. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., AIDS). Preferred indications include boosting a T cell-mediated immune response, and alternatively, suppressing a T cell-mediated immune response. Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon,</p>
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				agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Mackey et al., J Leukoc Biol 63(4):418:428 (1998); and Skov et al., 164(7):3500-3505 (2000), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, inflammation and inflammatory disorders, and asthma and allergy.
284	HSNAZ09	698	SEAP in OE-33		
285	HSAH16	699	Production of IFNgamma using a	IFNgamma FMAT. IFNγ plays a central role in the immune	A highly preferred embodiment of the invention



			<p>system and is considered to be a proinflammatory cytokine. IFN<math>\gamma</math> promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFN<math>\gamma</math>), and the activation of T cells. Such assays that may be used or routinely modified to test</p>	<p>includes a method for stimulating the production of IFN<math>\gamma</math>. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of IFN<math>\gamma</math>. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory</p>
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				<p>immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance</p>	<p>disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis,</p>
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				responsiveness to immunomodulatory factors.	suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
286	HSQBF66	700	Production of IL-5	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the	<p>A highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-5 production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-5 production. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) immunoglobulin production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) immunoglobulin production. A highly preferred indication includes allergy. A highly preferred indication includes asthma. A highly preferred indication includes rhinitis. An additional highly preferred indication is infection (e.g., an</p>

				<p>stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell</p>	<p>infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example,</p>
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				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease.
286	HSQBF66	700	IFN $\gamma$ in Human T-cell 2B9		
286	HSQBF66	700	SEAP in OE-33		
287	HSQES57	701	Production of TNF alpha by dendritic cells	TNF $\alpha$ FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely	A highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Highly preferred indications

				<p>modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1998); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol</p>	<p>include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, glioma</p>
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				<p>65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>(e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
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287	HSQES57	701	Activation of Natural Killer Cell ERK Signaling Pathway.	<p>Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating natural killer cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating natural killer cell differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell differentiation. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity") and infections (e.g., as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as</p>
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				<p>used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.</p>	<p>described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include cancers such as, kidney, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, urinary cancer, lymphoma and leukemias. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Other highly preferred indications include, pancytopenia, leukopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), arthritis, asthma, AIDS,</p>
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288	HSRBE06	702	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,	granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, immune reactions to transplanted organs and tissues, endocarditis, meningitis, Lyme Disease, and allergies.
				A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and	

				<p>Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's</p>
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					<p>disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
288	HSRBE06	702	IL-10 in Human T-cell 2B9		
289	HSRFD18	703	IFNg in Human T-cell 293T		
289	HSRFD18	703	Production of IL-10 and activation of T-cells.	<p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid</p>

				<p>production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in</p>	<p>arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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				the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	
290	HSSDI26	704	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and

				<p>invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or</p>	<p>immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications</p>
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			<p>otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
290	HSSDI26	704	<p>Inhibition of squalene synthetase gene transcription.</p>	<p>Reporter Assay: construct contains regulatory and coding sequence of squalene synthetase, the first specific enzyme in the cholesterol biosynthetic pathway. See Jiang, et al., J. Biol. Chem. 268:12818-12824(1993), the contents of which are herein incorporated by reference in its entirety. Cells were treated with</p>



					SID supernatants, and SEAP activity was measured after 72 hours. HepG2 is a human hepatocellular carcinoma cell line (ATCC HB-8065). See Knowles et al., Science. 209:497-9 (1980), the contents of which are herein incorporated by reference in its entirety.	
290	HSSDI26	704	IFNg in Human T-cell 2B9			
290	HSSDI26	704	IL-10 in Human T-cell 2B9			
290	HSSDI26	704	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and	A highly preferred embodiment of the invention includes a method for stimulating endothelial cell growth. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell growth. A highly preferred embodiment of the invention includes a method for stimulating endothelial cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell proliferation. A highly preferred embodiment of the invention includes a method for	

				<p>agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.</p>	<p>stimulating apoptosis of endothelial cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) apoptosis of endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) endothelial cell activation. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) the activation of and/or inactivating endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating angiogenesis. An alternative highly preferred embodiment of the invention includes a method for inhibiting angiogenesis. A highly preferred embodiment of the invention includes a method for reducing cardiac hypertrophy. An alternative highly preferred embodiment of the invention includes a method for inducing cardiac hypertrophy. Highly preferred indications include neoplastic diseases (e.g., as described below under</p>
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				<p>“Hyperproliferative Disorders”), and disorders of the cardiovascular system (e.g., heart disease, congestive heart failure, hypertension, aortic stenosis, cardiomyopathy, valvular regurgitation, left ventricular dysfunction, atherosclerosis and atherosclerotic vascular disease, diabetic nephropathy, intracardiac shunt, cardiac hypertrophy, myocardial infarction, chronic hemodynamic overload, and/or as described below under “Cardiovascular Disorders”).</p> <p>Highly preferred indications include cardiovascular, endothelial and/or angiogenic disorders (e.g., systemic disorders that affect vessels such as diabetes mellitus, as well as diseases of the vessels themselves, such as of the arteries, capillaries, veins and/or lymphatics). Highly preferred are indications that stimulate angiogenesis and/or cardiovascularization. Highly preferred are indications that inhibit angiogenesis and/or cardiovascularization.</p>
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					Highly preferred indications include antiangiogenic activity to treat solid tumors, leukemias, and Kaposi's sarcoma, and retinal disorders. Highly preferred indications include neoplasms and cancer, such as, Kaposi's sarcoma, hemangioma (capillary and cavernous), glomus tumors, telangiectasia, bacillary angiomatosis, hemangioendothelioma, angiosarcoma, haemangiopericytoma, lymphangioma, lymphangiosarcoma. Highly preferred indications also include cancers such as, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Highly preferred indications also include arterial disease, such as, atherosclerosis, hypertension, coronary artery disease, inflammatory vasculitides, Reynaud's disease and Reynaud's phenomenon,
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					aneurysms, restenosis; venous and lymphatic disorders such as thrombophlebitis, lymphangitis, and lymphedema; and other vascular disorders such as peripheral vascular disease, and cancer. Highly preferred indications also include trauma such as wounds, burns, and injured tissue (e.g., vascular injury such as, injury resulting from balloon angioplasty, and atherosclerotic lesions), implant fixation, scarring, ischemia reperfusion injury, rheumatoid arthritis, cerebrovascular disease, renal diseases such as acute renal failure, and osteoporosis. Additional highly preferred indications include stroke, graft rejection, diabetic or other retinopathies, thrombotic and coagulative disorders, vasculitis, lymph angiogenesis, sexual disorders, age-related macular degeneration, and treatment /prevention of endometriosis and related conditions. Additional highly preferred indications include fibromas, heart disease, cardiac arrest,
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					heart valve disease, and vascular disease. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional preferred indications include inflammation and inflammatory disorders (such as acute and chronic inflammatory diseases, e.g., inflammatory bowel disease and Crohn's disease), and pain management.
292	HSSEF77	706	Activation of T-Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious

			<p>invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture</p>	<p>disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia,</p>
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				cell line with cytotoxic activity.	Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
292	HSSEF77	706	SEAP in HIB/CRE		
292	HSSEF77	706	Insulin Secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and dysregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental



			<p>test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HIT15 Cells. HIT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and</p>	<p>confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications</p>
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				glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	associated with insulin resistance.
292	HSSEF77	706	Production of RANTES in endothelial cells (such as human umbilical vein endothelial cells (HUEVC))	RANTES FMAT. Assays for immunomodulatory proteins that induce chemotaxis of T cells, monocytes, and eosinophils are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as RANTES, and the induction of chemotactic responses in immune cells. Such assays that may be used or routinely modified to test	

				<p>immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Cocchi et al., Science 270(5243):1811-1815 (1995); and Robinson et al., Clin Exp Immunol 101(3):398-407 (1995), the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.</p>
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292	HSSEF77	706	<p>Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))</p>	<p>Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to measure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and</p>	<p>Highly preferred indications include inflammation (acute and chronic), restnosis, atherosclerosis, asthma and allergy. Highly preferred indications include inflammation and inflammatory disorders, immunological disorders, neoplastic disorders (e.g. cancer/tumorigenesis), and cardiovascular disorders (such as described below under "Immune Activity", "Blood-Related Disorders", "Hyperproliferative Disorders" and/or "Cardiovascular Disorders"). Highly preferred indications include neoplasms and cancers such as, for example, leukemia, lymphoma, melanoma, renal cell carcinoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
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294	HSSGJ58	708	Production of ICAM-1	<p>other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.</p> <p>Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke</p>
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296	HSXCP38	710	<p>Activation of transcription through cAMP response element (CRE) in pre-adipocytes.</p>	<p>endothelial cells (MVEC).</p> <p>Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies</p>	<p>A highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. An additional highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease,</p>
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				and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). Additional highly preferred indications are complications associated with insulin resistance.
HSXCP38	710	Activation of	Assays for the activation of	A preferred embodiment of	

296	transcription through serum response element in immune cells (such as natural killer cells).	transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated	the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly
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			<p>by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.</p>	<p>preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to</p>
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297	HSYBI06	711	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by	transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
				Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Vascular Disease, Atherosclerosis, Restenosis, Stroke, and Asthma.	

				reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	
297	HSYBI06	711	IgG in Human B cells SAC		
298	HT3BF49	712	Production of IL-4	IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-4 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-4 production. A highly preferred indication includes asthma. A highly preferred indication includes allergy. A highly preferred indication includes rhinitis. Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma,

			<p>proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are</p>	<p>melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute</p>
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				primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
298	HT3BF49	712	Production of IL-5	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	A highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-5 production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-5 production. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) immunoglobulin production. An alternative highly preferred

			<p>invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436</p>	<p>embodiment of the invention includes a method for inhibiting (e.g., decreasing) immunoglobulin production. A highly preferred indication includes allergy. A highly preferred indication includes asthma. A highly preferred indication includes rhinitis. An additional highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative</p>
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				<p>(1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>Disorders"). Preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease.</p>
299	HT5GR59	713	Activation of transcription through API response	Assays for the activation of transcription through the API response element are known in	Preferred indications include neoplastic diseases (e.g., as described below under

			<p>the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., <i>Gene</i> 66:1-10 (1988); Cullen and Malm, <i>Methods in Enzymol</i> 216:362-368 (1992); Henthorn et al., <i>Proc Natl Acad Sci USA</i> 85:6342-6346 (1988); Rellahan et al., <i>J Biol Chem</i> 272(49):30806-30811 (1997); Chang et al., <i>Mol Cell Biol</i> 18(9):4986-4993 (1998); and Fraser et al., <i>Eur J Immunol</i> 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available</p>	<p>“Hyperproliferative Disorders”), blood disorders (e.g., as described below under “Immune Activity”, “Cardiovascular Disorders”, and/or “Blood-Related Disorders”), and infection (e.g., an infectious disease as described below under “Infectious Disease”). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative</p>
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				<p>(e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.</p>	<p>disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.</p>
299	HT5GR59	713	<p>Stimulation of insulin secretion from pancreatic beta cells.</p>	<p>Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also</p>	<p>A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic</p>

			<p>by certain proteins/peptides, and dysregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells</p>	<p>neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyposmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity.</p>
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				isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.	Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.
300	HTAEI78	714	HLA-DR in Human T cells		
301	HTDAA78	715	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Vascular Disease, Atherosclerosis, Restenosis, Stroke, and Asthma.

301	HTDAA78	715	Activation of Natural Killer Cell ERK Signaling Pathway.	reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	<p>Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in</p> <p>A highly preferred embodiment of the invention includes a method for stimulating natural killer cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating natural killer cell differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell differentiation. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as</p>
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				indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Other highly preferred indications include, pancytopenia, leukopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), arthritis, asthma, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, immune reactions to transplanted organs and tissues, endocarditis, meningitis, Lyme Disease, and allergies.
302	HTECB02	716	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al,
				Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke

303	HTEDF18	717		<p>FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).</p> <p>MIP-1alpha FMA T. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating MIP1a production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MIP1a production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or</p>
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				<p>chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in</p>	<p>"Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma, and allergy. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as</p>
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				the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
304	HTED128	718	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides	<p>A highly preferred embodiment of the invention includes a method for stimulating adipocyte proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting adipocyte proliferation. A highly preferred embodiment of the invention includes a method for stimulating adipocyte differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting adipocyte differentiation. A highly preferred embodiment of the</p>

				<p>of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known</p>	<p>invention includes a method for stimulating (e.g., increasing) adipocyte activation. An alternative highly preferred embodiment of the invention includes a method for inhibiting the activation of (e.g., decreasing) and/or inactivating adipocytes. Highly preferred indications include endocrine disorders (e.g., as described below under "Endocrine Disorders"). Highly preferred indications also include neoplastic diseases (e.g., lipomas, liposarcomas, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include blood disorders (e.g., hypertension, congestive heart failure, blood vessel blockage, heart disease, stroke, impotence and/or as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity"), neural disorders (e.g., as described below under "Neural Activity and Neurological Diseases"),</p>
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					<p>and infection (e.g., as described below under "Infectious Disease"). A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine</p>
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				<p>disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below (particularly of the urinary tract and skin). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance. Additional highly preferred indications are disorders of the musculoskeletal systems including myopathies, muscular dystrophy, and/or as described herein. Additional highly preferred indications include, hypertension, coronary artery disease, dyslipidemia, gallstones, osteoarthritis, degenerative arthritis, eating disorders, fibrosis, cachexia, and</p>
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					<p>kidney diseases or disorders. Preferred indications include neoplasms and cancer, such as, lymphoma, leukemia and breast, colon, and kidney cancer. Additional preferred indications include melanoma, prostate, lung, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Highly preferred indications include lipomas and liposarcomas. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
304	HTEDJ28	718	<p>Activation of transcription through NFAT response element in immune cells (such as natural killer cells).</p>	<p>Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for</p>	<p>Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response,</p>

			transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with	and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. An additional highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas,
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				cytolytic and cytotoxic activity.	multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
305	HTEEW69	719	Proliferation of pre-adipose cells (such as 3T3-L1 cells)	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pre-adipose cells and cell lines. For example, the CellTiter-Glo <sup>®</sup> Luminescent Cell Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present	

					which signals the presence of metabolically active cells. 3T3-L1 is a mouse preadipocyte cell line. It is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation. Cells were differentiated to an adipose-like state before being used in the screen. See Green H and Meuth M., Cell 3: 127-133 (1974), which is herein incorporated by reference in its entirety.	
305	HTEEW69	719	CD152 in Human T cells			
305	HTEEW69	719	Production of RANTES in endothelial cells (such as human umbilical vein endothelial cells (HUEVC))		RANTES FMAT. Assays for immunomodulatory proteins that induce chemotaxis of T cells, monocytes, and eosinophils are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production	



				<p>of cytokines, such as RANTES, and the induction of chemotactic responses in immune cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Cocchi et al., Science 270(5243):1811-1815 (1995); and Robinson et al., Clin Exp Immunol 101(3):398-407 (1995), the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions</p>
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305	HTEEW69	719	<p>Activation of transcription through cAMP response element in immune cells (such as T-cells).</p>	<p>that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.</p> <p>Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, bind to CREB transcription factor, and modulate expression of genes involved in a wide variety of cell functions.</p> <p>Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA</p>	<p>Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred</p>
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				<p>85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.</p>	<p>indications include neoplasms and cancers, such as, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.</p>
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305	HTEEW69	719	<p>Activation of transcription through GAS response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol</p>	<p>Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications</p>
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				<p>155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOL T4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).</p>	<p>include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity"; "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis,</p>
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305	HTEEW69	719	<p>Activation of transcription through NFKB response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al.,</p>	<p>meningitis, Lyme Disease, and asthma and allergy.</p> <p>Highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), and immunodeficiencies (e.g., as described below). An additional highly preferred indication is infection (e.g., AIDS, and/or an infectious disease as described below under "Infectious Disease"). Highly preferred indications include neoplastic diseases (e.g., melanoma, leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, melanoma,</p>
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				<p>29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).</p>	<p>renal cell carcinoma, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, suppression of immune reactions to transplanted organs, asthma and allergy.</p>
305	HTEEW69	719	SEAP in OE-21		
305	HTEEW69	719	IL-8 in SW480		

306	HTEGS07	720	<p>Activation of transcription through serum response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly</p>	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred</p>
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				<p>available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of</p>
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307	HTEGS11	721	<p>Activation of transcription through serum response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in</p>	<p>immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p> <p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described</p>
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				<p>Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or</p>
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			<p>supernatants or controls for 15-18 hours. SEAP activity was measured after 48 hours. LS174T is an epithelial colon adenocarcinoma cell line. Its tumorigenicity in nude mice make cell line LS174T a model for studies on the mechanism of synthesis and secretion of specific tumoral markers in colon cancer. See, Patan et al., Circ Res, 89(8):732-39 (2001), the contents of which are herein incorporated by reference in its entirety.</p>	
308	HTEHU59	722	<p>Calcium flux in chondrocytes</p>	<p>Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions.</p>
				<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Bone and Cartilage Diseases, including but not limited to Arthritis, Cartilage repair, Bone Repair, Osteoporosis, and related tumors including chondrosarcomas, chondroblastomas, and chondromas.</p>

				<p>Exemplary assays that may be used or routinely modified to measure calcium flux in chondrocytes include assays disclosed in: Asada S, et al., <i>Inflamm Res</i>, 50(1):19-23 (2001); Schwartz Z, et al., <i>J Bone Miner Res</i>, 6(7):709-718 (1991); Iannotti JP, et al., <i>J Bone Joint Surg Am</i>, 67(1):113-120 (1985); Sullivan E., et al., <i>Methods Mol Biol</i> 1999; 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include bovine chondrocytes.</p>	
308	HTEHU59	722	IgG in Human B cells SAC	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers,
308	HTEHU59	722	Activation of transcription through GAS response element in immune cells (such as T-cells).		

			<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Hentinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are</p>	<p>such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or</p>
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				publicly available (e.g., through the ATCC).	<p>"Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.</p>
308	HTEHU59	722	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to	Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and



				<p>assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells</p>	<p>hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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				are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	
309	HTEKM46	723	Myoblast cell proliferation	Assays for muscle cell proliferation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic	Highly preferred indications include diabetes, myopathy, muscle cell atrophy, cancers of muscle (such as, rhabdomyoma, and rhabdosarcoma), cardiovascular disorders (such as congestive heart failure, cachexia, myxomas, fibromas, congenital cardiovascular abnormalities, heart disease, cardiac arrest, heart valve disease, vascular disease, and also as described below under "Cardiovascular Disorders"), stimulating myoblast proliferation, and inhibiting myoblast proliferation.

				<p>cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins-4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation" J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells" J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cell line. Rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.</p>	
				Assays for measuring calcium flux are well-known in the art and may be used or routinely	Preferred embodiments of the invention include using polypeptides of the invention (or
309	HTEKM46	723	Calcium flux in chondrocytes		

			<p>modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux in chondrocytes include assays disclosed in: Asada S, et al., <i>Inflamm Res</i>, 50(1):19-23 (2001); Schwartz Z, et al., <i>J Bone Miner Res</i>, 6(7):709-718 (1991); Iannotti JP, et al., <i>J Bone Joint Surg Am</i>, 67(1): 113-120 (1985); Sullivan E., et al., <i>Methods Mol Biol</i> 1999; 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may</p>	<p>antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Bone and Cartilage Diseases, including but not limited to Arthritis, Cartilage repair, Bone Repair, Osteoporosis, and related tumors including chondrosarcomas, chondroblastomas, and chondromas.</p>
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310	HTEMQ17	724	Regulation of apoptosis of immune cells (such as mast cells).	<p>be routinely generated. Exemplary cells that may be used according to these assays include bovine chondrocytes.</p> <p>Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis activity induced by polypeptides of the invention</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of asthma, allergy, hypersensitivity and inflammation.</p>
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				<p>(including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.</p>	
311	HTGBK95	725	<p>Production of IL-10 and activation of T-cells.</p>	<p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune</p>

				<p>invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of</p>	<p>diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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312	HTLAP64	726	<p>Activation of serum response element in immune cells (such as T-cells).</p>	<p>Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p> <p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-</p>	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated</p>
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				<p>368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p> <p>immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia,</p>
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					<p>thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
313	HTLBT80	727	<p>Activation of Adipocyte ERK Signaling Pathway</p>	<p>Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating adipocyte proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting adipocyte proliferation. A highly preferred embodiment of the invention includes a method for stimulating adipocyte</p>

			<p>cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous</p>	<p>differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting adipocyte differentiation. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) adipocyte activation. An alternative highly preferred embodiment of the invention includes a method for inhibiting the activation of (e.g., decreasing) and/or inactivating adipocytes. Highly preferred indications include endocrine disorders (e.g., as described below under "Endocrine Disorders"). Highly preferred indications also include neoplastic diseases (e.g., lipomas, liposarcomas, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include blood disorders (e.g., hypertension, congestive heart failure, blood vessel blockage, heart disease, stroke, impotence and/or as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related</p>
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				<p>substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.</p>	<p>Disorders”), immune disorders (e.g., as described below under “Immune Activity”), neural disorders (e.g., as described below under “Neural Activity and Neurological Diseases”), and infection (e.g., as described below under “Infectious Disease”). A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the “Renal Disorders” section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis,</p>
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					<p>microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below (particularly of the urinary tract and skin). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance. Additional highly preferred indications are disorders of the musculoskeletal systems including myopathies, muscular dystrophy, and/or as described herein. Additional</p>
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					highly preferred indications include, hypertension, coronary artery disease, dyslipidemia, gallstones, osteoarthritis, degenerative arthritis, eating disorders, fibrosis, cachexia, and kidney diseases or disorders. Preferred indications include neoplasms and cancer, such as, lymphoma, leukemia and breast, colon, and kidney cancer. Additional preferred indications include melanoma, prostate, lung, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Highly preferred indications include lipomas and liposarcomas. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
313	HTLBT80	727	SEAP in HIB/CRE		
313	HTLBT80	727	Proliferation of pre-adipose cells (such as 3T3-L1 cells)	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the	

				invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pre-adipose cells and cell lines. For example, the CellTiter-Glo <sup>®</sup> Luminescent Cell Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. 3T3-L1 is a mouse preadipocyte cell line. It is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation. Cells were differentiated to an adipose-like state before being used in the screen. See Green H and Meuth M., Cell 3: 127-133 (1974), which is herein incorporated by reference in its entirety.	
313	HTLBT80	727	IgG in Human B cells SAC		
313	HTLBT80	727	SEAP in OE-21		
313	HTLBT80	727	Activation of transcription through the EGR (Early	Assays for the activation of transcription through the EGR response element are well-	
				Preferred embodiments of the invention include using polypeptides of the invention (or	

			<p>Growth Response) element in immune cells (such as B- cells).</p>	<p>known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate EGR transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the EGR response element that may be used or routinely modified to test EGR response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Richards JD, et al., J Immunol, 166(6):3855-3864 (2001); Dinkel, A, et al., J Exp Med, 188(12):2215-2224 (1998); and, Newton, JS, et al., Eur J Immunol 1996 Apr;26(4):811-816 (1996), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary epithelial</p>	<p>antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Cancer, Autoimmunity, Allergy and Asthma.</p>
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313	HTLBT80	727	<p>Activation of transcription through the EGR (Early Growth Response) element in immune cells (such as B-cells).</p>	<p>cells that may be used according to these assays include the Raji cell line.</p> <p>Assays for the activation of transcription through the EGR response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate EGR transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the EGR response element that may be used or routinely modified to test EGR response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Richards JD, et al., J Immunol, 166(6):3855-3864 (2001); Dinkel, A, et al., J Exp Med, 188(12):2215-2224 (1998); and, Newton, JS, et al., Eur J Immunol 1996 Apr;26(4):811-816 (1996), the</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Cancer, Autoimmunity, Allergy and Asthma.</p>
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313	HTLBT80	727	<p>Activation of transcription through NFKB response element in immune cells (such as B-cells).</p>	<p>contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary epithelial cells that may be used according to these assays include the Raji cell line.</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Cancer, Autoimmunity, Allergy and Asthma</p>
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314	HTLDA84	728	Production of IFN $\gamma$ using a T cells	disclosed in: Gri G, et al., Biol Chem, 273(11):6431-6438 (1998); Pyatt DW, et al., Cell Biol Toxicol 2000;16(1):41-51 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the Reh B-cell line.	A highly preferred embodiment of the invention includes a method for stimulating the production of IFN $\gamma$ . An alternative highly preferred embodiment of the invention includes a method for
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				<p>secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays</p>	<p>inhibiting the production of IFNg. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g.,</p>
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			disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis,
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					meningitis, Lyme Disease, asthma and allergy.
314	HTLDA84	728	IFNg in Human T-cell 293T		
315	HTLDN29	729	Production of MCP-1	<p>MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) MCP-1 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MCP-1 production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus,</p>

				<p>(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis (bacterial and viral), Lyme Disease, asthma, and allergy Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer.</p>
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					Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
315	HTLDN29	729	Production of MIP1alpha	<p>MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating MIP1a production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MIP1a production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as</p>



				<p>chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>described below). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma, and allergy. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer.</p>
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					Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.
315	HTLDN29	729	IL-10 in Human T-cell 2B9		
316	HTLDU78	730	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyposmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis,

				<p>and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.</p>	<p>microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
316	HTLDU78	730	Activation of T-Cell p38 or JNK	<p>Kinase assay. JNK and p38 kinase assays for signal</p>	<p>Preferred indications include neoplastic diseases (e.g., as</p>

			<p>transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells</p>	<p>described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications</p>
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				that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
316	HTLDU78	730	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as

				<p>immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-</p>	<p>described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms</p>
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317	HTLEC82	731	SEAP in Senescence Assay		
317	HTLEC82	731	Activation of transcription through API response element in immune cells (such as T-cells).	Assays for the activation of transcription through the API response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and	Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers,



				Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
318	HTLEM16	732	Regulation of apoptosis of immune cells (such as mast cells).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of asthma, allergy, hypersensitivity and

				<p>invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., <i>J Biol Chem</i>, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., <i>J Exp Med</i>, 192(8):1093-1103 (2000); Lee et al., <i>FEBS Lett</i> 485(2-3): 122-126 (2000); Nor et al., <i>J Vasc Res</i> 37(3): 209-218 (2000); and Karsan and Harlan, <i>J Atheroscler Thromb</i> 3(2): 75-80 (1996); the contents</p>	inflammation.
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318	HTLEM16	732	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.	A highly preferred embodiment of the invention includes a method for stimulating endothelial cell growth. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell growth. A highly preferred embodiment of the invention includes a method for stimulating endothelial cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating apoptosis of endothelial cells. An alternative
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			disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) apoptosis of endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) endothelial cell activation. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) the activation of and/or inactivating endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating angiogenesis. An alternative highly preferred embodiment of the invention includes a method for inhibiting angiogenesis. A highly preferred embodiment of the invention includes a method for reducing cardiac hypertrophy. An alternative highly preferred embodiment of the invention includes a method for inducing cardiac hypertrophy. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the
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				<p>cardiovascular system (e.g., heart disease, congestive heart failure, hypertension, aortic stenosis, cardiomyopathy, valvular regurgitation, left ventricular dysfunction, atherosclerosis and atherosclerotic vascular disease, diabetic nephropathy, intracardiac shunt, cardiac hypertrophy, myocardial infarction, chronic hemodynamic overload, and/or as described below under “Cardiovascular Disorders”).</p> <p>Highly preferred indications include cardiovascular, endothelial and/or angiogenic disorders (e.g., systemic disorders that affect vessels such as diabetes mellitus, as well as diseases of the vessels themselves, such as of the arteries, capillaries, veins and/or lymphatics). Highly preferred are indications that stimulate angiogenesis and/or cardiovascularization. Highly preferred are indications that inhibit angiogenesis and/or cardiovascularization.</p> <p>Highly preferred indications include antiangiogenic activity</p>
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					<p>to treat solid tumors, leukemias, and Kaposi's sarcoma, and retinal disorders. Highly preferred indications include neoplasms and cancer, such as, Kaposi's sarcoma, hemangioma (capillary and cavernous), glomus tumors, telangiectasia, bacillary angiomatosis, hemangioendothelioma, angiosarcoma, haemangiopericytoma, lymphangioma, lymphangiosarcoma. Highly preferred indications also include cancers such as, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Highly preferred indications also include arterial disease, such as, atherosclerosis, hypertension, coronary artery disease, inflammatory vasculitides, Reynaud's disease and Reynaud's phenomenon, aneurysms, restenosis; venous and lymphatic disorders such as</p>
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					<p>thrombophlebitis, lymphangitis, and lymphedema; and other vascular disorders such as peripheral vascular disease, and cancer. Highly preferred indications also include trauma such as wounds, burns, and injured tissue (e.g., vascular injury such as, injury resulting from balloon angioplasty, and atherosclerotic lesions), implant fixation, scarring, ischemia reperfusion injury, rheumatoid arthritis, cerebrovascular disease, renal diseases such as acute renal failure, and osteoporosis. Additional highly preferred indications include stroke, graft rejection, diabetic or other retinopathies, thrombotic and coagulative disorders, vascularitis, lymph angiogenesis, sexual disorders, age-related macular degeneration, and treatment /prevention of endometriosis and related conditions. Additional highly preferred indications include fibromas, heart disease, cardiac arrest, heart valve disease, and vascular disease. Preferred</p>
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					indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional preferred indications include inflammation and inflammatory disorders (such as acute and chronic inflammatory diseases, e.g., inflammatory bowel disease and Crohn's disease), and pain management.
319	HTLEV48	733	MCP-1 in HUVEC		
319	HTLEV48	733	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke



				that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	
320	HTLF173	734	Production of TNF alpha by dendritic cells	TNFa FMAAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	A highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or

				<p>invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells</p>	<p>"Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain,</p>
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				that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
321	HTNAM63	735	Activation of transcription through cAMP response	Assays for the activation of transcription through the cAMP response element are well-	Preferred indications include blood disorders (e.g., as described below under "Immune

			<p>known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowsky et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according</p>	<p>Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon,</p>
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				to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
321	HTNAM63	735	SEAP in UMR-106		
322	HTNBK13	736	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic

			<p>ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly</p>	<p>retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyposmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders</p>
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				<p>available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.</p>	<p>as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
322	HTNBK13	736	<p>Production of TNF alpha by dendritic cells</p>	<p>TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate</p>	<p>A highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications</p>

			<p>inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1998); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated</p>	<p>include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include</p>
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				<p>using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
322	HTNBK13	736	<p>Production of IL-10 and activation of T-cells.</p>	<p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as</p>

			<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete</p>	<p>described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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					IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	
323	HTOAI50	737	SEAP in HIB/CRE			
323	HTOAI50	737	Production of IFNgamma using a T cells		IFNgamma FMAT. IFNγ plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNγ promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention	A highly preferred embodiment of the invention includes a method for stimulating the production of IFNγ. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of IFNγ. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease

				<p>(including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),</p>	<p>and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include</p>
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				<p>the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.</p>
324	HTOAMI1	738	Myoblast cell proliferation	<p>Assays for muscle cell proliferation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit myoblast cell</p>	<p>Highly preferred indications include diabetes, myopathy, muscle cell atrophy, cancers of muscle (such as, rhabdomyoma, and rhabdosarcoma), cardiovascular disorders (such as congestive heart failure, cachexia, myxomas, fibromas, congenital cardiovascular</p>

				<p>proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins-4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation" J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells" J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cell line. Rat myoblast L6 cells are</p>	<p>abnormalities, heart disease, cardiac arrest, heart valve disease, vascular disease, and also as described below under "Cardiovascular Disorders"), stimulating myoblast proliferation, and inhibiting myoblast proliferation.</p>
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324	HTOAM11	738	Production of IFNgamma using a T cells	<p>an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.</p> <p>IFNgamma FMAT. IFNγ plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNγ promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating the production of IFNγ. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of IFNγ. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic</p>
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				<p>function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFN<math>\gamma</math>), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques</p>	<p>lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia,</p>
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				disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
324	HTOAM11	738	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and	<p>A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel</p>

			<p>disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., <i>Am J Physiol</i>, 277(4 Pt 2):R959-66 (1999); Li, M., et al., <i>Endocrinology</i>, 138(9):3735-40 (1997); Kim, K.H., et al., <i>FEBS Lett</i>, 377(2):237-9 (1995); and, Miraglia S et. al., <i>Journal of Biomolecular Screening</i>, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced</p>	<p>blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred</p>
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				<p>rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.</p>	<p>indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
326	HTODH83	740	<p>Activation of transcription through serum response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,</p>	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and</p>

				<p>Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's</p>
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					<p>disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
326	HTODH83	740	Production of ICAM-1	<p>Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke</p>

				disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	
327	HTODN35	741	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention)	Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-

				<p>to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p>	mediated immune response.
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328	HTOEV16	742	Production of IL-6	<p>IL-6 F<sub>1</sub>MA<sub>1</sub>T. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications</p>
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				<p>stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease,</p>
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					sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
328	HTOEVI6	742	SEAP in OE-21		
329	HTOGR38	743	Activation of Natural Killer Cell ERK Signaling Pathway.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-	A highly preferred embodiment of the invention includes a method for stimulating natural killer cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating natural killer cell differentiation. An alternative highly preferred embodiment of the invention includes a method for inhibiting natural killer cell differentiation. Highly

				<p>induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.</p>	<p>preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity") and infections (e.g., as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include cancers such as,</p>
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330	HTOHQ05	744	Production of MIP1alpha	MIP-1alpha FMA T. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the	<p>kidney, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, urinary cancer, lymphoma and leukemias. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Other highly preferred indications include, pancytopenia, leukopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), arthritis, asthma, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, immune reactions to transplanted organs and tissues, endocarditis, meningitis, Lyme Disease, and allergies.</p> <p>A highly preferred embodiment of the invention includes a method for stimulating MIP1a production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MIP1a production. A highly</p>
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			<p>invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and</p>	<p>preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune</p>
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				<p>Nardelli et al., <i>J Leukoc Biol</i> 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma, and allergy. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
331	HTPDU17	745	SEAP in HIB/CRE		
331	HTPDU17	745	Production of IL-4	<p>IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-4 production. An alternative highly preferred embodiment of the invention includes a method</p>

			known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1994); Yssel et al., Res Immunol	for inhibiting (e.g., reducing) IL-4 production. A highly preferred indication includes asthma. A highly preferred indication includes allergy. A highly preferred indication includes rhinitis. Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related
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			<p>144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
HTSFJ32	746	Activation of	Assays for the activation of	A preferred embodiment of



332	transcription through serum response element in immune cells (such as T-cells).	transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the	the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly
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				<p>ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin’s disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt’s lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to</p>
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					transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
332	HTSFJ32	746	Activation of Skeletal Muscle Cell PI3 Kinase Signalling Pathway	<p>Kinase assay. Kinase assays, for example an GSK-3 kinase assay, for PI3 kinase signal transduction that regulate glucose metabolism and cell survival are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol</p>	<p>A highly preferred embodiment of the invention includes a method for increasing muscle cell survival. An alternative highly preferred embodiment of the invention includes a method for decreasing muscle cell survival. A preferred embodiment of the invention includes a method for stimulating muscle cell proliferation. In a specific embodiment, skeletal muscle cell proliferation is stimulated. An alternative highly preferred embodiment of the invention includes a method for inhibiting muscle cell proliferation. In a specific embodiment, skeletal muscle cell proliferation is inhibited. A preferred embodiment of the invention</p>

			<p>Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cells that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and striated fibers after culture in differentiation media.</p>	<p>includes a method for stimulating muscle cell differentiation. In a specific embodiment, skeletal muscle cell differentiation is stimulated. An alternative highly preferred embodiment of the invention includes a method for inhibiting muscle cell differentiation. In a specific embodiment, skeletal muscle cell differentiation is inhibited. Highly preferred indications include disorders of the musculoskeletal system. Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), endocrine disorders (e.g., as described below under "Endocrine Disorders"), neural disorders (e.g., as described below under "Neural Activity and Neurological Diseases"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), immune disorders (e.g., as described below under "Immune Activity"), and infection (e.g., as described below under</p>
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					<p>“Infectious Disease”). A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyposmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section</p>
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					<p>below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, infections (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance. Additional highly preferred indications are disorders of the musculoskeletal system including myopathies, muscular dystrophy, and/or as described herein. Additional highly preferred indications include: myopathy, atrophy, congestive heart failure, cachexia, myxomas, fibromas, congenital cardiovascular abnormalities,</p>
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					heart disease, cardiac arrest, heart valve disease, and vascular disease. Highly preferred indications include neoplasms and cancer, such as, rhabdomyoma, rhabdosarcoma, stomach, esophageal, prostate, and urinary cancer. Preferred indications also include breast, lung, colon, pancreatic, brain, and liver cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, hyperplasia, metaplasia, and/or dysplasia.
333	HTTDN24	747	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications

				<p>activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other</p>
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					preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
333	HTTDN24	747	IgG in Human B cells SAC		
333	HTTDN24	747	CD152 in Human T cells		

333	HTTNDN24	747	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to	Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.
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				these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	
334	HTTEE41	748	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications

				<p>activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other</p>
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					<p>preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
334	HTTEE41	748	Stimulation of Calcium Flux in pancreatic beta cells.	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of	<p>A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication</p>

				<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-601 (1995); Mogami H, et al., Endocrinology, 136(7):2960-6 (1995); Richardson SB, et al., Biochem J, 288 ( Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec;10(8):535-41 (1989), the contents of each of which is herein incorporated by reference</p>	<p>associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g.,</p>
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				in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HIT15 Cells. HIT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.
334	HTTEE41	748	Production of IL-13 and activation of T-cells.	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune

				<p>invention) to stimulate or inhibit production of IL-13 and/or activation of T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science;282: 2261-2263 (1998), and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6.</p>	<p>diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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335	HTXBD09	749	<p>Activation of transcription through NFKB response element in epithelial cells (such as HELA cells).</p>	<p>Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p> <p>Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of epithelial genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in:</p>	<p>Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Cancer, Wound Healing, and Inflammation. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example,</p>
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				Kaltschmidt B, et al., <i>Oncogene</i> , 18(21):3213-3225 (1999); Beetz A, et al., <i>Int J Radiat Biol</i> , 76(11):1443-1453 (2000); Berger et al., <i>Gene</i> 66:1-10 (1998); Cullen and Malm, <i>Methods in Enzymol</i> 216:362-368 (1992); Henthorn et al., <i>Proc Natl Acad Sci USA</i> 85:6342-6346 (1988); Valle Blazquez et al, <i>Immunology</i> 90(3):455-460 (1997); Aramburau et al., <i>J Exp Med</i> 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Epithelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary epithelial cells that may be used according to these assays include the HELA cell line.	hyperplasia, metaplasia, and/or dysplasia. Preferred indications include inflammation and inflammatory disorders.
336	HTXDB22	750	SEAP in HIB/CRE		
336	HTXDB22	750	Activation of transcription through GAS response element in immune cells (such as T-	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders").

			cells).	<p>be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Hentinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the</p>	<p>Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune</p>
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					SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
337	HTXDC38	751	Activation of transcription through	Assays for the activation of transcription through the	Highly preferred indications include neoplastic diseases (e.g.,	

			<p>GAS response element in immune cells (such as T-cells).</p>	<p>Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are</p>	<p>leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly</p>
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				<p>herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).</p>	<p>preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.</p>
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338	HTXDC77	752	SEAP in Jurkat/IL4 promoter		
338	HTXDC77	752	SEAP in Jurkat/IL4 promoter (antiCD3 co-stim)		
338	HTXDC77	752	Activation or inhibition of transcription through NFKB response element in immune cells (such as basophils).	<p>This reporter assay measures activation or inhibition of the NFKB signaling pathway in Ku812 human basophil cell line.</p> <p>Assays for the activation or inhibition of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes.</p> <p>NFKB is important in the pathogenesis of asthma.</p> <p>Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of</p>	

				<p>the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Cells were pretreated with SID supernatants or controls for 15-18 hours, and then 10 ng/mL of TNF was added to stimulate the NFkB reporter. SEAP activity was measured after 48 hours. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils. See, Kishi et al., Leuk Res. 9:381-390 (1985); Blom et al., Eur J Immunol. 22:2025-32</p>
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338	HTXDC77	752	Activation of transcription through serum response element in immune cells (such as natural killer cells).	(1992), where the contents of each are herein incorporated by reference in its entirety. Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and
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				<p>al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.</p>	<p>inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS,</p>
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					granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
338	HTXDC77	752	SEAP in OE-21		
339	HTXDD61	753	CD69 in Human T cells		
339	HTXDD61	753	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to measure the upregulation of cell surface VCAM-1 expression in	Highly preferred indications include inflammation (acute and chronic), restenosis, atherosclerosis, asthma and allergy. Highly preferred indications include inflammation and inflammatory disorders, immunological disorders, neoplastic disorders (e.g. cancer/tumorigenesis), and cardiovascular disorders (such as described below under "Immune Activity", "Blood-

340	HTXDG92	754	<p>endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.</p> <p>Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of</p>	<p>Related Disorders", "Hyperproliferative Disorders" and/or "Cardiovascular Disorders"). Highly preferred indications include neoplasms and cancers such as, for example, leukemia, lymphoma, melanoma, renal cell carcinoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p> <p>Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular</p>
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			<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according</p>	<p>Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications</p>
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				to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
340	HTXDG92	754	Activation of transcription through GAS response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative

				<p>modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).</p>	<p>disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis.</p>
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					Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
341	HTXET11	755	Activation of T-Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that	Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis,



				<p>may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.</p>	<p>systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease,</p>
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						inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
341	HTXET11	755	Inhibition of squalene synthetase gene transcription.	Reporter Assay: construct contains regulatory and coding sequence of squalene synthetase, the first specific enzyme in the cholesterol biosynthetic pathway. See Jiang, et al., J. Biol. Chem. 268:12818-12824(1993), the contents of which are herein incorporated by reference in its entirety. Cells were treated with SID supernatants, and SEAP activity was measured after 72 hours. HepG2 is a human hepatocellular carcinoma cell line (ATCC HB-8065). See Knowles et al., Science. 209:497-9 (1980), the contents of which are herein incorporated by reference in its entirety.		
341	HTXET11	755	IFNg in Human T-cell 2B9			
341	HTXET11	755	IL-10 in Human T-cell 2B9			
342	HTXJD85	756	Production of IL-10 and activation of T-	Assays for production of IL-10 and activation of T-cells are		Highly preferred indications include allergy and asthma.

			<p>cells.</p>	<p>well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells</p>	<p>Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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				<p>may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p>	
342	HTXJD85	756	SEAP in HIB/CRE		
343	HTXJY08	757	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	<p>This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the</p>	<p>Highly preferred indications include allergy, asthma, and rhinitis. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications also include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g.,</p>

				<p>invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these</p>	<p>rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary tract cancers and/or as described below under "Hyperproliferative Disorders"). Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia,</p>
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				assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease.
343	HTXJY08	757	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory

				<p>invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.</p>	<p>disorders. An additional highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia,</p>
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343	HTXJY08	757	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10	neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
				<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production.</p> <p>Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated</p>	



				<p>(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.</p>	<p>immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia,</p>
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					thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
344	HTXMMZ07	758	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune

				<p>in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.</p>	<p>Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast,</p>
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					lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
	HUFCL31	759	Production of	Assays for measuring	Highly preferred indications

345			VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	<p>expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to measure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood</p>	<p>include inflammation (acute and chronic), restnosis, atherosclerosis, asthma and allergy. Highly preferred indications include inflammation and inflammatory disorders, immunological disorders, neoplastic disorders (e.g. cancer/tumorigenesis), and cardiovascular disorders (such as described below under "Immune Activity", "Blood-Related Disorders", "Hyperproliferative Disorders" and/or "Cardiovascular Disorders"). Highly preferred indications include neoplasms and cancers such as, for example, leukemia, lymphoma, melanoma, renal cell carcinoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
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				vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	
345	HUFCL31	759	Production of GM-CSF	<p>GM-CSF FMT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes-macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and modulate the growth and</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating the production of GM-CSF. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of GM-CSF. Highly preferred indications include inflammation and inflammatory disorders. An additional highly preferred indication is infection (e.g., as described below under "Infectious Disease". Highly preferred indications include blood disorders (e.g., neutropenia (and the prevention of neutropenia (e.g., in HIV infected patients), and/or as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications also include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus</p>

				<p>differentiation of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show</p>	<p>erythematosis, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include asthma. Highly preferred indications include neoplastic diseases (e.g., leukemia (e.g., acute lymphoblastic leukemia, and acute myelogenous leukemia), lymphoma (e.g., non-Hodgkin's lymphoma and Hodgkin's disease), and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Highly preferred indications include: suppression of immune reactions to transplanted organs and tissues (e.g., bone marrow transplant); accelerating myeloid recovery;</p>
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				antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.	and mobilizing hematopoietic progenitor cells. Preferred indications include boosting a T cell-mediated immune response, and alternatively, suppressing a T cell-mediated immune response. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutrophilia, psoriasis, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and allergy.
346	HUKDF20	760	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a	A highly preferred indication is diabetes mellitus. Additional highly preferred indications include complications associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section



				<p>reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Thai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J</p>	<p>below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin). An additional highly preferred indication is obesity and/or complications associated</p>
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				<p>Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.</p>	<p>with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
346	HUKDF20	760	<p>Activation of transcription through AP1 response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies</p>	<p>Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular</p>

				<p>and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell</p>	<p>Disorders”, and/or “Blood-Related Disorders”), and infection (e.g., an infectious disease as described below under “Infectious Disease”). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred</p>
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				line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.
346	HUKDF20	760	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis,

				<p>antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative</p>
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					disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
346	HUKDF20	760	Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of	Highly preferred indications include asthma, allergy, hypersensitivity reactions, and inflammation. Preferred indications include infection (e.g., an infectious disease as

				<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFκB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFκB response element that may be used or routinely modified to test NFκB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. For example, a reporter assay (which measures increases in transcription inducible from a</p>	<p>described below under "Infectious Disease"), immunological disorders, inflammation and inflammatory disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below).</p>
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				<p>NFkB responsive element in EOL-1 cells) may link the NFkB element to a reporter gene and binds to the NFkB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.</p>	
346	HUKDF20	760	<p>Activation of transcription through NFkB response element in immune cells (such as basophils).</p>	<p>This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell line. Assays for the activation of transcription through the NFkB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFkB</p>	<p>Highly preferred indication includes allergy, asthma, and rhinitis. Additional highly preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications include immunological and hematopoietic disorders (e.g., as described below under "Immune Activity", and</p>



				<p>transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFkB response element that may be used or routinely modified to test NFkB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line</p>	<p>"Blood-Related Disorders"). Preferred indications also include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancer, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, urinary tract cancers and as described below under "Hyperproliferative Disorders".</p>
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				that can be induced to differentiate into mature basophils.	
346	HUKDF20	760	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke
	HUKDF20	760	Activation of	Assays for the activation of	A preferred embodiment of

346	transcription through serum response element in immune cells (such as natural killer cells).	transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated	the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly
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			<p>by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.</p>	<p>preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin’s disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt’s lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to</p>
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347	HUKDY82	761	<p>Activation of transcription through GAS response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or</p>	<p>transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p> <p>Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders").</p> <p>Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred</p>
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				<p>antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).</p>	<p>indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia</p>
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348	HUSCJ14	762	Regulation of transcription through the FAS promoter element in hepatocytes	Assays for the regulation of transcription through the FAS promoter element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in livers of diabetic mice. This stimulation	<p>(ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.</p> <p>A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental</p>
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			<p>of transcription is also somewhat glucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 ( Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or</p>	<p>confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications</p>
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				cAMP derivatives.	associated with insulin resistance.
348	HUSCJ14	762	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	<p>Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to measure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines</p>	<p>Highly preferred indications include inflammation (acute and chronic), restnosis, atherosclerosis, asthma and allergy. Highly preferred indications include inflammation and inflammatory disorders, immunological disorders, neoplastic disorders (e.g. cancer/tumorigenesis), and cardiovascular disorders (such as described below under "Immune Activity", "Blood-Related Disorders", "Hyperproliferative Disorders" and/or "Cardiovascular Disorders"). Highly preferred indications include neoplasms and cancers such as, for example, leukemia, lymphoma, melanoma, renal cell carcinoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>

				or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	
349	HUSGL67	763	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated</p>

				<p>368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia,</p>
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					<p>thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
350	HUSGU40	764	<p>Activation of transcription through serum response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved</p>	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune</p>

			<p>in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid</p>
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				<p>tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
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351	HUSIR18	765	<p>Activation of serum response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly</p>	<p>A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred</p>
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				<p>available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of</p>
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					immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
352	HUVDJ48	766	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-

			<p>proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.</p>	<p>hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below), dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
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352	HUVDJ48	766	<p>Activation of JNK Signaling Pathway in immune cells (such as eosinophils).</p>	<p>Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety.</p>	<p>Highly preferred indications include asthma, allergy, hypersensitivity reactions, inflammation, and inflammatory disorders. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting or inhibiting immune cell proliferation. Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include boosting an eosinophil-mediated immune response, and suppressing an eosinophil-mediated immune response.</p>
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				<p>Exemplary cells that may be used according to these assays include eosinophils.</p> <p>Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74;</p>
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				and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	
354	HWBBQ70	768	Production of IL-6	IL-6 FMT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred

			<p>art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated</p>	<p>indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications</p>
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				<p>by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p>
355	HWBBU75	769	<p>Activation of JNK Signaling Pathway in immune cells (such as eosinophils).</p>	<p>Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to</p>	<p>Highly preferred indications include asthma, allergy, hypersensitivity reactions, inflammation, and inflammatory disorders. Additional highly preferred indications include</p>

				<p>assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and</p>	<p>immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting or inhibiting immune cell proliferation. Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include boosting an eosinophil-mediated immune response, and suppressing an eosinophil-mediated immune response.</p>
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				<p>mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit</p>
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				JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	
356	HWBCN36	770	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke

357	HWBDJ08	771	Production of IL-6	assays include microvascular endothelial cells (MVEC). IL-6 F/MAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for	A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and
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			<p>immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or</p>	<p>alternatively suppressing a B cell-mediated immune response. Highly preferred indications include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's</p>
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				cytokines, initiate and upregulate T cell proliferation and functional activities.	lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
357	HWBDJ08	771	Activation of transcription through NFAT response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT	Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-

			<p>response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.</p>	<p>mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. An additional highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's</p>
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				lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.
358	HWBFX16	772	<p>Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the</p> <p>Activation of transcription through cAMP response element in immune cells (such as T-cells).</p>	<p>Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional</p>

				<p>invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is a suspension culture of IL-2 dependent T cells that also respond to IL-4.</p>	<p>preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia,</p>
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359	HWDAG96	773	<p>Activation of transcription through AP1 response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA</p>	<p>neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.</p> <p>Preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity", "Cardiovascular Disorders", and/or "Blood-Related Disorders"), and infection (e.g., an infectious disease as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications</p>
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				<p>85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4.</p>	<p>also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include arthritis, asthma, AIDS, allergy, anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, granulomatous disease, inflammatory bowel disease, sepsis, psoriasis, suppression of immune reactions to transplanted organs and tissues, endocarditis, meningitis, and Lyme Disease.</p>
				Assays for the activation of transcription through the Serum	A preferred embodiment of the invention includes a method
				Activation of transcription through	
				774	
				HWD AJ01	
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			serum response element in immune cells (such as T-cells).	<p>Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T</p>	<p>for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include</p>
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				<p>cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin’s disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt’s lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues,</p>
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					hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
361	HWHPB78	775	Activation of transcription through NFKB response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene	Highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), and immunodeficiencies (e.g., as described below). An additional highly preferred indication is infection (e.g., AIDS, and/or an infectious disease as described below under "Infectious Disease"). Highly preferred indications include neoplastic

			<p>66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NKL cell line, which is a human natural killer cell line established from the peripheral blood of a patient with large granular lymphocytic leukemia. This IL-2 dependent suspension culture cell line has a morphology resembling that of activated NK cells.</p>	<p>diseases (e.g., melanoma, leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, melanoma, renal cell carcinoma, leukemia, lymphoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, suppression of immune</p>
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362	HWLBO67	776	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein	reactions to transplanted organs, asthma and allergy. Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.
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				<p>incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p>	
363	HWLGP26	777	<p>Production of IL-10 and activation of T-cells.</p>	<p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below),</p>



				<p>assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2</p>	<p>immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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				polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	
364	HILCA24	778	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al.,	A highly preferred indication is diabetes mellitus. An additional highly preferred indication is a complication associated with diabetes (e.g., diabetic retinopathy, diabetic nephropathy, kidney disease (e.g., renal failure, nephropathy and/or other diseases and disorders as described in the "Renal Disorders" section below), diabetic neuropathy, nerve disease and nerve damage (e.g., due to diabetic neuropathy), blood vessel blockage, heart disease, stroke, impotence (e.g., due to diabetic neuropathy or blood vessel blockage), seizures, mental confusion, drowsiness, nonketotic hyperglycemic-hyperosmolar coma, cardiovascular disease (e.g., heart disease, atherosclerosis, microvascular disease, hypertension, stroke, and other diseases and disorders as described in the "Cardiovascular Disorders" section below),

364	HILCA24	778	<p>Activation of transcription through STAT6 response element in immune cells (such as T-cells).</p>	<p>Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.</p>	<p>dyslipidemia, endocrine disorders (as described in the "Endocrine Disorders" section below), neuropathy, vision impairment (e.g., diabetic retinopathy and blindness), ulcers and impaired wound healing, and infection (e.g., infectious diseases and disorders as described in the "Infectious Diseases" section below, especially of the urinary tract and skin), carpal tunnel syndrome and Dupuytren's contracture). An additional highly preferred indication is obesity and/or complications associated with obesity. Additional highly preferred indications include weight loss or alternatively, weight gain. Additional highly preferred indications are complications associated with insulin resistance.</p>
				<p>Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of</p>	<p>A highly preferred indication is allergy. Another highly preferred indication is asthma. Additional highly preferred indications include inflammation and inflammatory</p>

			<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according</p>	<p>disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia,</p>
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				to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture of T cells that also respond to IL-4.	pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
364	HILCA24	778	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6	A highly preferred indication is allergy. Another highly preferred indication is asthma. Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related

			transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these	Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple
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				assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
365	HE2CA60	779	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE	A preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) TNF alpha production. An alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications

				<p>activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other</p>
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365	HE2CA60	779	Production of IL-4	IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells,	<p>preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").</p> <p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing)</p>
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				<p>macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160</p>	<p>IL-4 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-4 production. A highly preferred indication includes asthma. A highly preferred indication includes allergy. A highly preferred indication includes rhinitis. Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include blood</p>
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				<p>(2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious</p>
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365	HE2CA60	779	<p>Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))</p>	<p>Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to measure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes</p>	<p>Disease").</p> <p>Highly preferred indications include inflammation (acute and chronic), restnosis, atherosclerosis, asthma and allergy. Highly preferred indications include inflammation and inflammatory disorders, immunological disorders, neoplastic disorders (e.g. cancer/tumorigenesis), and cardiovascular disorders (such as described below under "Immune Activity", "Blood-Related Disorders", "Hyperproliferative Disorders" and/or "Cardiovascular Disorders"). Highly preferred indications include neoplasms and cancers such as, for example, leukemia, lymphoma, melanoma, renal cell carcinoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
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366	HPW/TF23	780	<p>Production of IL-13 and activation of T-cells.</p>	<p>to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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				and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Preferred embodiments of the invention include using polypeptides of the invention (or antibodies, agonists, or antagonists thereof) in detection, diagnosis, prevention, and/or
367	HLW42	781	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention	

				(including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	treatment of Inflammation, Vascular Disease, Atherosclerosis, Restenosis, and Stroke
368	HGCAC19	782	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the	Highly preferred indications include asthma, allergy, hypersensitivity reactions, inflammation, and inflammatory disorders. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"),

				<p>invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or</p>	<p>autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting or inhibiting immune cell proliferation. Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include boosting an eosinophil-mediated immune response, and suppressing an eosinophil-mediated immune response.</p>
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				<p>routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each</p>
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368	HGCAC19	782	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	of which are herein incorporated by reference in its entirety. This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the	Highly preferred indications include allergy, asthma, and rhinitis. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications also include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary tract cancers and/or as described below under "Hyperproliferative Disorders").
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				<p>invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.</p>	<p>Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease.</p>
HGCAC19	782	Activation of	This reporter assay measures	Highly preferred indications	

368	transcription through NFAT response element in immune cells (such as mast cells).	activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn	include allergy, asthma, and rhinitis. Additional preferred indications include infection (e.g., an infectious disease as described below under "Infectious Disease"), and inflammation and inflammatory disorders. Preferred indications also include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary tract cancers and/or as described below under "Hyperproliferative Disorders"). Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example,
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			<p>et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.</p>	<p>hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease.</p>
368	HGCAC19	782	<p>Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating T cell proliferation. An alternative highly preferred embodiment of the invention</p>

				<p>polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according</p>	<p>includes a method for inhibiting T cell proliferation. A highly preferred embodiment of the invention includes a method for activating T cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting the activation of and/or inactivating T cells. A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-2 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-2 production. Additional highly preferred indications include inflammation and inflammatory disorders. Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. An additional highly preferred indication includes infection</p>
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				<p>to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.</p>	<p>(e.g., AIDS, and/or as described below under “Infectious Disease”). Highly preferred indications include neoplastic diseases (e.g., melanoma, renal cell carcinoma, leukemia, lymphoma, and/or as described below under “Hyperproliferative Disorders”). Highly preferred indications include neoplasms and cancers, such as, for example, melanoma (e.g., metastatic melanoma), renal cell carcinoma (e.g., metastatic renal cell carcinoma), leukemia, lymphoma (e.g., T cell lymphoma), and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. A highly preferred indication is infection (e.g., tuberculosis, infections associated with granulomatous disease, and osteoporosis, and/or an infectious disease as described below under “Infectious Disease”). A highly</p>
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		cells (such as T-cells).	<p>be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the</p>	<p>alternative preferred embodiment of the invention includes a method for stimulating (e.g., increasing) TNF alpha production. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders, and treating joint damage in patients with rheumatoid arthritis. An additional highly preferred indication is sepsis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as</p>
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				<p>CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.</p>	<p>described below under “Hyperproliferative Disorders”). Additionally, highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, glioma (e.g., malignant glioma), solid tumors, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin’s disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt’s lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis,</p>
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				meningitis, Lyme Disease, cardiac reperfusion injury, and asthma and allergy. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
370	HEQBJ01	784	Production of IL-13 and activation of T-cells.	<p>Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science;282: 2261-2263 (1998),</p> <p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>

				<p>and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p>	<p>Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications</p>
372	HTLIF12	786	<p>Activation of transcription through GAS response element in immune cells (such as T-cells).</p>	<p>Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to</p>	<p>Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications</p>

			<p>assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are</p>	<p>include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related</p>
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				publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and asthma and allergy.
373	HTEEF26	787	Production of MIP1alpha	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic	A highly preferred embodiment of the invention includes a method for

			<p>cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160</p>	<p>stimulating MIP1a production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) MIP1a production. A highly preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease"). Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional highly preferred indications include inflammation and inflammatory disorders. Preferred indications also include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple</p>
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				<p>(2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma, and allergy. Preferred indications also include neoplastic diseases (e.g., leukemia, lymphoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, leukemia, lymphoma, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia.</p>
374	HTEED26	788	Activation of transcription through GAS response	Assays for the activation of transcription through the Gamma Interferon Activation	Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, and/or as



			<p>element in immune cells (such as T-cells).</p>	<p>Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Hentinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference</p>	<p>described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma (e.g., T cell lymphoma, Burkitt's lymphoma, non-Hodgkins lymphoma, Hodgkin's disease), melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional preferred indications include inflammation and inflammatory disorders. Highly preferred indications</p>
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				<p>in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.</p>	<p>include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease and malignant osteoporosis, and/or an infectious disease as described below under "Infectious Disease"). An additional preferred indication is idiopathic pulmonary fibrosis. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease; and asthma and allergy.</p>
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375	HPJB151	789	Production of IL-6	<p>IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating (e.g., increasing) IL-6 production. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., reducing) IL-6 production. A highly preferred indication is the stimulation or enhancement of mucosal immunity. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., as described below under "Infectious Disease"). Highly preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Highly preferred indications also include boosting a B cell-mediated immune response and alternatively suppressing a B cell-mediated immune response. Highly preferred indications</p>
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			<p>stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.</p>	<p>include inflammation and inflammatory disorders. Additional highly preferred indications include asthma and allergy. Highly preferred indications include neoplastic diseases (e.g., myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, myeloma, plasmacytoma, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease,</p>
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					sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, and Lyme Disease. An additional preferred indication is infection (e.g., an infectious disease as described below under "Infectious Disease").
376	HOABP31	790	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNγ plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNγ promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention	A highly preferred embodiment of the invention includes a method for stimulating the production of IFNγ. An alternative highly preferred embodiment of the invention includes a method for inhibiting the production of IFNγ. Highly preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related Disorders", and/or "Cardiovascular Disorders"), and infection (e.g., viral infections, tuberculosis, infections associated with chronic granulomatous disease

				<p>(including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),</p>	<p>and malignant osteoporosis, and/or as described below under "Infectious Disease"). Highly preferred indications include autoimmune disease (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below), immunodeficiency (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response. Additional highly preferred indications include inflammation and inflammatory disorders. Additional preferred indications include idiopathic pulmonary fibrosis. Highly preferred indications include neoplastic diseases (e.g., leukemia, lymphoma, melanoma, and/or as described below under "Hyperproliferative Disorders"). Highly preferred indications include neoplasms and cancers, such as, for example, leukemia, lymphoma, melanoma, and prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver and urinary cancer. Other preferred indications include</p>
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				<p>the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p>	<p>benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Preferred indications include anemia, pancytopenia, leukopenia, thrombocytopenia, Hodgkin's disease, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, AIDS, granulomatous disease, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, suppression of immune reactions to transplanted organs and tissues, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, asthma and allergy.</p>
377	HB/JHT01	791	MCP-1 in Eol-1		
377	HB/JHT01	791	Production of IL-10 and activation of T-cells.	<p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and</p>	<p>Highly preferred indications include allergy and asthma. Additional highly preferred indications include immune and hematopoietic disorders (e.g., as described below under "Immune Activity", and "Blood-Related</p>

				<p>agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology &amp; Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce</p>	<p>Disorders"), autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, multiple sclerosis and/or as described below), immunodeficiencies (e.g., as described below), boosting a T cell-mediated immune response, and suppressing a T cell-mediated immune response.</p>
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379	HTLIF11	793	Protection from Endothelial Cell Apoptosis.	<p>differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p> <p>Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis rescue of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler</p>	<p>A highly preferred embodiment of the invention includes a method for stimulating endothelial cell growth. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell growth. A highly preferred embodiment of the invention includes a method for stimulating endothelial cell proliferation. An alternative highly preferred embodiment of the invention includes a method for inhibiting endothelial cell proliferation. A highly preferred embodiment of the invention includes a method for stimulating endothelial cell growth. An alternative highly preferred embodiment of the invention includes a method for</p>
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				<p>Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary endothelial cells that may be used according to these assays include bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.</p>	<p>inhibiting endothelial cell growth. A highly preferred embodiment of the invention includes a method for stimulating apoptosis of endothelial cells. An alternative highly preferred embodiment of the invention includes a method for inhibiting (e.g., decreasing) apoptosis of endothelial cells. A highly preferred embodiment of the invention includes a method for stimulating angiogenesis. An alternative highly preferred embodiment of the invention includes a method for inhibiting angiogenesis. A highly preferred embodiment of the invention includes a method for reducing cardiac hypertrophy. An alternative highly preferred embodiment of the invention includes a method for inducing cardiac hypertrophy. Highly preferred indications include neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the cardiovascular system (e.g., heart disease, congestive heart failure, hypertension, aortic</p>
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					<p>stenosis, cardiomyopathy, valvular regurgitation, left ventricular dysfunction, atherosclerosis and atherosclerotic vascular disease, diabetic nephropathy, intracardiac shunt, cardiac hypertrophy, myocardial infarction, chronic hemodynamic overload, and/or as described below under “Cardiovascular Disorders”).</p> <p>Highly preferred indications include cardiovascular, endothelial and/or angiogenic disorders (e.g., systemic disorders that affect vessels such as diabetes mellitus, as well as diseases of the vessels themselves, such as of the arteries, capillaries, veins and/or lymphatics). Highly preferred are indications that stimulate angiogenesis and/or cardiovascularization. Highly preferred are indications that inhibit angiogenesis and/or cardiovascularization.</p> <p>Highly preferred indications include antiangiogenic activity to treat solid tumors, leukemias, and Kaposi's sarcoma, and retinal disorders. Highly</p>
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					<p>preferred indications include neoplasms and cancer, such as, Kaposi's sarcoma, hemangioma (capillary and cavernous), glomus tumors, telangiectasia, bacillary angiomatosis, hemangioendothelioma, angiosarcoma, haemangiopericytoma, lymphangioma, lymphangiosarcoma. Highly preferred indications also include cancers such as, prostate, breast, lung, colon, pancreatic, esophageal, stomach, brain, liver, and urinary cancer. Preferred indications include benign dysproliferative disorders and pre-neoplastic conditions, such as, for example, hyperplasia, metaplasia, and/or dysplasia. Highly preferred indications also include arterial disease, such as, atherosclerosis, hypertension, coronary artery disease, inflammatory vasculitides, Reynaud's disease and Reynaud's phenomenon, aneurysms, restenosis; venous and lymphatic disorders such as thrombophlebitis, lymphangitis, and lymphedema; and other vascular disorders such as</p>
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					<p>peripheral vascular disease, and cancer. Highly preferred indications also include trauma such as wounds, burns, and injured tissue (e.g., vascular injury such as, injury resulting from balloon angioplasty, and atherosclerotic lesions), implant fixation, scarring, ischemia reperfusion injury, rheumatoid arthritis, cerebrovascular disease, renal diseases such as acute renal failure, and osteoporosis. Additional highly preferred indications include stroke, graft rejection, diabetic or other retinopathies, thrombotic and coagulative disorders, vascularitis, lymph angiogenesis, sexual disorders, age-related macular degeneration, and treatment /prevention of endometriosis and related conditions. Additional highly preferred indications include fibromas, heart disease, cardiac arrest, heart valve disease, and vascular disease. Preferred indications include blood disorders (e.g., as described below under "Immune Activity", "Blood-Related</p>
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					Disorders", and/or "Cardiovascular Disorders"). Preferred indications include autoimmune diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and/or as described below) and immunodeficiencies (e.g., as described below). Additional preferred indications include inflammation and inflammatory disorders (such as acute and chronic inflammatory diseases, e.g., inflammatory bowel disease and Crohn's disease), and pain management.
379	HTLIF11	793	Production of RANTES in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	RANTES FMAT. Assays for immunomodulatory proteins that induce chemotaxis of T cells, monocytes, and eosinophils are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory	

				<p>proteins evaluate the production of cytokines, such as RANTES, and the induction of chemotactic responses in immune cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Cocchi et al., Science 270(5243):1811-1815 (1995); and Robinson et al., Clin Exp Immunol 101(3):398-407 (1995), the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular</p>
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					permeability, vascular tone, and immune cell extravasation.	
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**Table 1E:** Polynucleotides encoding polypeptides of the present invention can be used in assays to test for one or more biological activities. One such biological activity which may be tested includes the ability of polynucleotides and polypeptides of the invention to stimulate up-regulation or down-regulation of expression of particular genes and proteins. Hence, if polynucleotides and polypeptides of the present invention exhibit activity in altering particular gene and protein expression patterns, it is likely that these polynucleotides and polypeptides of the present invention may be involved in, or capable of effecting changes in, diseases associated with the altered gene and protein expression profiles. Hence, polynucleotides, polypeptides, or antibodies of the present invention could be used to treat said associated diseases.

TaqMan® assays may be performed to assess the ability of polynucleotides (and polypeptides they encode) to alter the expression pattern of particular "target" genes. TaqMan® reactions are performed to evaluate the ability of a test agent to induce or repress expression of specific genes in different cell types. TaqMan® gene expression quantification assays ("TaqMan® assays") are well known to, and routinely performed by, those of ordinary skill in the art. TaqMan® assays are performed in a two step reverse transcription / polymerase chain reaction (RT-PCR). In the first (RT) step, cDNA is reverse transcribed from total RNA samples using random hexamer primers. In the second (PCR) step, PCR products are synthesized from the cDNA using gene specific primers.

To quantify gene expression the Taqman® PCR reaction exploits the 5' nuclease activity of AmpliTaq Gold® DNA Polymerase to cleave a Taqman® probe (distinct from the primers) during PCR. The Taqman® probe contains a reporter dye at the 5'-end of the probe and a quencher dye at the 3' end of the probe. When the probe is intact, the proximity of the reporter dye to the quencher dye results in suppression of the reporter fluorescence. During PCR, if the target of interest is present, the probe specifically anneals between the forward and reverse primer sites. AmpliTaq Fold DNA Polymerase then cleaves the probe between the reporter and quencher when the probe hybridizes to the target, resulting in increased fluorescence of the reporter (see Figure 2). Accumulation of PCR products is detected directly by monitoring the increase in fluorescence of the reporter dye.

After the probe fragments are displaced from the target, polymerization of the strand continues. The 3'-end of the probe is blocked to prevent extension of the probe during PCR. This process occurs in every cycle and does not interfere with the exponential accumulation of product. The increase in fluorescence signal is detected only if the target sequence is complementary to the probe and is amplified during PCR. Because of these requirements, any nonspecific amplification is not detected.

For test sample preparation, vector controls or constructs containing the coding sequence for the gene of interest are transfected into cells, such as for example 293T cells, and supernatants collected after 48 hours. For cell treatment and RNA isolation, multiple primary human cells or human cell lines are used; such cells may include but are not limited to, Normal Human Dermal Fibroblasts, Aortic Smooth Muscle, Human Umbilical Vein Endothelial Cells, HepG2, Daudi, Jurkat, U937, Caco, and THP-1 cell lines. Cells are plated in growth media and growth is arrested by culturing without media change for 3 days, or by switching cells to low serum media and incubating overnight. Cells are treated for 1, 6, or 24 hours with either vector control supernatant or sample supernatant (or purified/partially purified protein preparations in buffer). Total RNA is isolated; for example, by using Trizol extraction or by using the Ambion RNAqueous(TM)-4PCR RNA isolation system. Expression levels of multiple genes are analyzed using TAQMAN, and expression in the test sample is compared to control vector samples to identify genes induced or repressed. Each of the above described techniques are well known to, and routinely performed by, those of ordinary skill in the art.

Table 1E indicates particular disease classes and preferred indications for which polynucleotides, polypeptides, or antibodies of the present invention may be used in detecting, diagnosing, preventing, treating and/or ameliorating said diseases and disorders based on "target" gene expression patterns which may be up- or down-regulated by polynucleotides (and the encoded polypeptides) corresponding to each indicated cDNA Clone ID (shown in Table 1E, Column 2).

Thus, in preferred embodiments, the present invention encompasses a method of detecting, diagnosing, preventing, treating, and/or ameliorating a disease or disorder listed in the "Disease Class" and/or "Preferred Indication" columns of Table 1E; comprising administering to a patient in which such detection, diagnosis, prevention, or treatment is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to detect, diagnose, prevent, treat, or ameliorate the disease or disorder. The first and second columns of Table 1D show the "Gene No." and "cDNA Clone ID No.", respectively, indicating certain nucleic acids and proteins (or antibodies against the same) of the invention (including polynucleotide, polypeptide, and antibody fragments or variants thereof) that may be used in detecting, diagnosing, preventing, treating, or ameliorating the disease(s) or disorder(s) indicated in the corresponding row in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

In another embodiment, the present invention also encompasses methods of detecting, diagnosing, preventing, treating, or ameliorating a disease or disorder listed in the "Disease Class" or "Preferred Indication" Columns of Table 1E; comprising administering to a patient combinations of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

The "Disease Class" Column of Table 1E provides a categorized descriptive heading for diseases, disorders, and/or conditions (more fully described below) that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

5           The "Preferred Indication" Column of Table 1E describes diseases, disorders, and/or conditions that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

10           The "Cell Line" and "Exemplary Targets" Columns of Table 1E indicate particular cell lines and target genes, respectively, which may show altered gene expression patterns (i.e., up- or down-regulation of the indicated target gene) in Taqman assays, performed as described above, utilizing polynucleotides of the cDNA Clone ID shown in the corresponding row. Alteration of expression patterns of the indicated "Exemplary Target" genes is correlated with a particular "Disease Class" and/or "Preferred Indication" as shown in the corresponding row under the respective column headings.

15           The "Exemplary Accessions" Column indicates GenBank Accessions (available online through the National Center for Biotechnology Information (NCBI) at <http://www.ncbi.nlm.nih.gov/>) which correspond to the "Exemplary Targets" shown in the adjacent row.

20           The recitation of "Cancer" in the "Disease Class" Column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof) may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate neoplastic diseases and/or disorders (e.g., leukemias, cancers, etc., as described below under "Hyperproliferative Disorders").

25           The recitation of "Immune" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

30           The recitation of "Angiogenesis" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), diseases and/or disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders"), diseases and/or disorders involving cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level"),

diseases and/or disorders involving angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity"), to promote or inhibit cell or tissue regeneration (e.g., as described below under "Regeneration"), or to promote wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

5           The recitation of "Diabetes" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diabetes (including diabetes mellitus types I and II), as well as diseases and/or disorders associated with, or consequential to, diabetes (e.g. as described below under "Endocrine Disorders," "Renal

10   Disorders," and "Gastrointestinal Disorders").

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Table 1E

Gene No.	cDNA Clone ID	Disease Class	Preferred Indications	Cell Line	Exemplary Targets	Exemplary Accessions
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving muscle tissues and the cardiovascular system (e.g. heart, lungs, circulatory system)). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving muscle tissue or the cardiovascular system). (AOSMC cells are human aortic smooth muscle cells).	AOSMC	CIS3 Granzyme B IL1B IL5	gb AB006967  AB006967 gb J04071 HUM CSE gb X02532 HSI LIBR gb X12705 HSB CDFIA
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). (The 293 cell line is a human embryonal kidney epithelial cell line available through the ATCC as cell line number CRL-1573).	HEK293	ICAM	gb X06990 HSI CAMI
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving endothelial cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not	HUVEC	CCR7 TNF	gb X84702 HSD NABLR2 gb AJ270944 HS A27094

62	HCEGG08	Immune	limited to, immune disorders involving endothelial cells). (HUVEC cells are human umbilical vein endothelial cells). Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving T-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving T-cells). (The Jurkat cell line is a human T lymphocyte cell line available through the ATCC as cell line number TIB-152).	Jurkat	GATA1 Rag1 Rag2	gb X17254 HSE RYF1 gb M29474 HU MRAG1 gb AY011962 A Y011962
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving cells of the hepatic system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the hepatic system).	Liver	ICAM	gb X06990 HSI CAMI
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the skin). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the skin). (NHDF cells are normal human dermal fibroblasts).	NHDF	HLA-c	
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the central nervous	SK-N-MC neuroblastom a	HLA-c VCAM	gb A30922 A30 922

62	HCEGG08	Immune	Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the central nervous system). (The SK-N-MC neuroblastoma cell line is a cell line derived from human brain tissue and is available through the ATCC as cell line number HTB-10).	THP1	CCR3 CCR4 CTLA4 Granzyme B Rag2 VCAM	gb AB023887 A B023887 gb AB023888 A B023888 gb AF316875 A F316875 gb J04071 HUM CSE gb AY011962 A Y011962 gb A30922 A30 922
62	HCEGG08	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving monocytes). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving monocytes). (The THP1 cell line is a human monocyte cell line available through the ATCC as cell line number TIB-202).	U937	CCR5 CCR7 CD25 CD30 CXCR3 Rag1 Rag2	gb AF161918 A F161918 gb X84702 HSD NABLR2 gb X03137 HSI L2RG7  gb Z79783 HSC KRL2 gb M29474 HU MRAG1 gb AY011962 A Y011962
305	HTEEW69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity"	AOSMC	CCR7 CXCR3	gb X84702 HSD NABLR2

			and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving muscle tissues and the cardiovascular system (e.g. heart, lungs, circulatory system)). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving muscle tissue or the cardiovascular system). (AOSMC cells are human aortic smooth muscle cells).		Rag2 VLA4	gb Z79783 HSC KRL2 gb AY011962 A Y011962 gb X16983 HSI NTAL4
305	HTEEW69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the cells of the gastrointestinal tract). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the gastrointestinal tract). (The Caco-2 cell line is a human colorectal adenocarcinoma cell line available through the ATCC as cell line number HTB-37).	Caco-2	TNF	gb AJ270944 HS A27094
305	HTEEW69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the B-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving B-cells). (The Daudi cell line is a human B lymphoblast cell line available through the ATCC as cell line number CCL-213).	Daudi	GATA3 ICAM TNF	gb X55037 HSG ATA3 gb X06990 HSI CAMI gb AJ270944 HS A27094
305	HTEEW69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving epithelial cells or the	HEK293	TNF	gb AJ270944 HS A27094



305	HTEEW/69	Immune	renal system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). (The 293 cell line is a human embryonal kidney epithelial cell line available through the ATCC as cell line number CRL-1573).	Liver	ICAM	gb X06990 HSI CAM1
305	HTEEW/69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving cells of the hepatic system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the hepatic system).	NHDF	CIS3 TNF	gb AB006967 A B006967 gb AJ270944 HS A27094
305	HTEEW/69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the skin). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the skin). (NHDF cells are normal human dermal fibroblasts).	SK-N-MC neuroblastoma a	TNF VCAM	gb AJ270944 HS A27094 gb A30922 A30 922

305	HTEEW69	Immune	is a cell line derived from human brain tissue and is available through the ATCC as cell line number HTB-10).	THP1	CD25 CD40 GATA3 LTBR Rag1	gb X03137 HSI L2RG7 gb AJ300189 HS A30018 gb X55037 HSG ATA3 gb AK027080 A K027080 gb M29474 HU MRAG1
305	HTEEW69	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving monocytes). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving monocytes). (The THP1 cell line is a human monocyte cell line available through the ATCC as cell line number TIB-202).	U937	IL1B TNF	gb X02532 HSI L1BR gb AJ270944 HS A27094

Table 2 further characterizes certain encoded polypeptides of the invention, by providing the results of comparisons to protein and protein family databases. The first column provides a unique clone identifier, "Clone ID NO:", corresponding to a cDNA clone disclosed in Table 1A and/or Table 1B. The second column provides the unique contig identifier, "Contig ID:" which allows correlation with the information in Table 1B. The third column provides the sequence identifier, "SEQ ID NO:", for the contig polynucleotide sequences. The fourth column provides the analysis method by which the homology/identity disclosed in the Table was determined. The fifth column provides a description of the PFAM/NR hit identified by each analysis. Column six provides the accession number of the PFAM/NR hit disclosed in the fifth column. Column seven, score/percent identity, provides a quality score or the percent identity, of the hit disclosed in column five. Comparisons were made between polypeptides encoded by polynucleotides of the invention and a non-redundant protein database (herein referred to as "NR"), or a database of protein families (herein referred to as "PFAM"), as described below.

The NR database, which comprises the NBRF PIR database, the NCBI GenPept database, and the SIB SwissProt and TrEMBL databases, was made non-redundant using the computer program nrdb2 (Warren Gish, Washington University in Saint Louis). Each of the polynucleotides shown in Table 1B, column 3 (e.g., SEQ ID NO:X or the 'Query' sequence) was used to search against the NR database. The computer program BLASTX was used to compare a 6-frame translation of the Query sequence to the NR database (for information about the BLASTX algorithm please see Altschul et al., J. Mol. Biol. 215:403-410 (1990), and Gish and States, Nat. Genet. 3:266-272 (1993). A description of the sequence that is most similar to the Query sequence (the highest scoring 'Subject') is shown in column five of Table 2 and the database accession number for that sequence is provided in column six. The highest scoring 'Subject' is reported in Table 2 if (a) the estimated probability that the match occurred by chance alone is less than  $1.0 \times 10^{-7}$ , and (b) the match was not to a known repetitive element. BLASTX returns alignments of short polypeptide segments of the Query and Subject sequences which share a high degree of similarity; these segments are known as High-Scoring Segment Pairs or HSPs. Table 2 reports the degree of similarity between the Query and the Subject for each HSP as a percent identity in Column 7. The percent identity is determined by dividing the number of exact matches between the two aligned sequences in the HSP, dividing by the number of Query amino acids in the HSP and multiplying by 100. The polynucleotides of SEQ ID NO:X which encode the polypeptide sequence that generates an HSP are delineated by columns 8 and 9 of Table 2.

The PFAM database, PFAM version 2.1, (Sonnhammer, Nucl. Acids Res., 26:320-322, 1998) consists of a series of multiple sequence alignments; one alignment for each protein family. Each multiple sequence alignment is converted into a probability model called a Hidden

Markov Model, or HMM, that represents the position-specific variation among the sequences that make up the multiple sequence alignment (see, e.g., Durbin, et al., *Biological sequence analysis: probabilistic models of proteins and nucleic acids*, Cambridge University Press, 1998 for the theory of HMMs). The program HMMER version 1.8 (Sean Eddy, Washington University in Saint Louis) was used to compare the predicted protein sequence for each Query sequence (SEQ ID NO:Y in Table 1B) to each of the HMMs derived from PFAM version 2.1. A HMM derived from PFAM version 2.1 was said to be a significant match to a polypeptide of the invention if the score returned by HMMER 1.8 was greater than 0.8 times the HMMER 1.8 score obtained with the most distantly related known member of that protein family. The description of the PFAM family which shares a significant match with a polypeptide of the invention is listed in column 5 of Table 2, and the database accession number of the PFAM hit is provided in column 6. Column 7 provides the score returned by HMMER version 1.8 for the alignment. Columns 8 and 9 delineate the polynucleotides of SEQ ID NO:X which encode the polypeptide sequence which show a significant match to a PFAM protein family.

As mentioned, columns 8 and 9 in Table 2, "NT From" and "NT To", delineate the polynucleotides of "SEQ ID NO:X" that encode a polypeptide having a significant match to the PFAM/NR database as disclosed in the fifth column. In one embodiment, the invention provides a protein comprising, or alternatively consisting of, a polypeptide encoded by the polynucleotides of SEQ ID NO:X delineated in columns 8 and 9 of Table 2. Also provided are polynucleotides encoding such proteins, and the complementary strand thereto.

The nucleotide sequence SEQ ID NO:X and the translated SEQ ID NO:Y are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, the nucleotide sequences of SEQ ID NO:X are useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in ATCC Deposit No:Z. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling immediate applications in chromosome mapping, linkage analysis, tissue identification and/or typing, and a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used to generate antibodies which bind specifically to these polypeptides, or fragments thereof, and/or to the polypeptides encoded by the cDNA clones identified in, for example, Table 1A and/or 1B.

Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the

generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and a predicted translated amino acid sequence identified as  
5 SEQ ID NO:Y, but also a sample of plasmid DNA containing cDNA ATCC Deposit No:Z (e.g., as set forth in columns 2 and 3 of Table 1A and/or as set forth, for example, in Table 1B, 6, and 7). The nucleotide sequence of each deposited clone can readily be determined by sequencing the deposited clone in accordance with known methods. Further, techniques known in the art can be  
10 used to verify the nucleotide sequences of SEQ ID NO:X. The predicted amino acid sequence can then be verified from such deposits. Moreover, the amino acid sequence of the protein encoded by a particular clone can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence.

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Table 2

cDNA Clone ID	Contig ID:	SEQ ID NO: X	Analysis Method	PFam/NR Description	PFam/NR Accession Number	Score/Percent Identity	NT From	NT To
H6BSF56	762968	11	HMMER 2.1.1	PFAM: Zinc-binding dehydrogenases	PF00107	35.6	176	415
			WUblastx. 64	(Q9BV79) SIMILAR TO CGI-63 PROTEIN.	Q9BV79	100% 92%	25 53	42 427
H6EEC72	889401	12	WUblastx. 64	hypothetical protein DKFZp434L061.1 - human	pir T43456 T43456	80% 41% 35% 34% 57%	1484 1277 973 659 991	1203 1080 845 549 365
HACBS22	847113	14	WUblastx. 64	(O60266) ADENYLATE CYCLASE TYPE III (EC 4.6.1.1) (ADENYLATE	CYA3_HUMAN	89% 25% 18% 93%	6 1547 917 416	416 2299 1111 2449
HADMB15	847116	19	WUblastx. 64	(Q9BVH1) SIMILAR TO DLXIN-1.	Q9BVH1	100%	8	109
HAGCC87	638587	21	WUblastx. 64	(Q9BGW3) HYPOTHETICAL 13.5 KDA PROTEIN.	Q9BGW3	65% 36% 57%	992 54 801	1105 116 980
HAGEG10	823543	23	WUblastx. 64	(Q9NWT5) CDNA FLJ20618 FIS, CLONE KAT05049.	Q9NWT5	100% 96%	1237 1	1377 156
HAGFS57	847120	25	WUblastx. 64	(Q9Y485) X-LIKE 1 PROTEIN.	Q9Y485	58%	9	872
HAGHN57	773286	26	WUblastx. 64	(O60416) WUGSC:H_RG276003.2 PROTEIN.	O60416	98%	65	1444
HAHEA15	847013	28	WUblastx. 64	(Q9NWD5) HYPOTHETICAL 31.4 KDA PROTEIN.	Q9NWD5	76% 99%	455 30	832 560
HAJAA47	534670	29	WUblastx. 64	(Q9NZA3) CDA14.	Q9NZA3	100%	17	157

HAJAY92	845601	30	WUblastx. 64	(O00549) ORF2-LIKE PROTEIN (FRAGMENT).	O00549	53% 26% 38% 31%	2226 769 1653 1721	2318 915 1769 2242
HAOAG15	852204	31	HMMER 2.1.1	PFAM: von Willebrand factor type A domain	PF00092	180.1	506	1057
			WUblastx. 64	(O75578) INTEGRIN ALPHA-10 PRECURSOR.	ITAG_HUMAN	90%	8	3463
HAQCE11	633730	34	WUblastx. 64	(Q24333) ELASTIN LIKE PROTEIN (FRAGMENT).	Q24333	95%	61	132
HATCB45	631172	36	WUblastx. 64	(Q9D016) 2610014F08RIK PROTEIN. (FRAGMENT).	Q9D016	88%	490	645
HATCI03	580805	37	WUblastx. 64	(Q9H743) CDNA: FLJ21394 FIS, CLONE COL03536.	Q9H743	71%	906	688
HBAGD86	838799	39	WUblastx. 64	(Q14287) HYPOTHETICAL PROTEIN (FRAGMENT).	Q14287	37%	801	559
HBGBC29	691473	41	WUblastx. 64	(O60513) BETA-1,4- GALACTOSYLTRANSFERASE 4 (EC 2.4.1.-) (BET	B4G4_HUMAN	61% 98%	1 65	78 1021
HBHAA81	846465	43	WUblastx. 64	(Q9DIG3) 111001D13RIK PROTEIN.	Q9DIG3	89% 79%	1329 28	1502 1329
HBIAC29	831751	44	WUblastx. 64	(Q9D7J5) 2310005N01RIK PROTEIN.	Q9D7J5	78% 93%	25 883	492 927
HBJAB02	837309	46	WUblastx. 64	(Q9NXT6) CDNA FLJ20062 FIS, CLONE COL01508.	Q9NXT6	70%	2	1210
HBJDS79	813588	49	WUblastx. 64	(Q9CY11) 2510039O18RIK PROTEIN.	Q9CY11	92% 89% 93% 100% 66%	1119 1322 1032 1509 2	1325 1519 1127 1532 1075
HBJEL16	847030	50	WUblastx. 64	(O95297) PROTEIN ZERO RELATED PROTEIN.	O95297	98%	285	491
HBJKD16	853358	52	WUblastx.	(Q9NXS4) CDNA FLJ20080 FIS, CLONE	Q9NXS4	91%	8	1528

HBMBM96	561935	53	64	COL03184. (Q9H387) PRO2550.	Q9H387	69% 67%	661 794	494 639
HBMTX26	695704	55	WUblastx. 64	(Q14288) HYPOTHETICAL PROTEIN (FRAGMENT).	Q14288	46% 61% 66% 54% 58%	964 272 136 611 546	608 156 101 507 292
HBMUH74	866160	56	WUblastx. 64	(Q9NVW8) CDNA FLJ10462 FIS, CLONE NT2RP1001494, WEAKLY SIMILAR TO MAL	Q9NVW8	100%	11	427
HBMWEE61	778066	57	WUblastx. 64	(Q9BX88) MAGPHININ DELTA.	Q9BX88	100% 95%	302 869	520 1009
HBNAAX40	834801	58	WUblastx. 64	(Q9H2K2) TANKYRASE-LIKE PROTEIN (TANKYRASE 2).	Q9H2K2	100% 100%	1 221	201 481
HBSAK32	856387	61	WUblastx. 64	(Q9HIQ7) BA12M19.1.3 (NOVEL PROTEIN).	Q9HIQ7	100% 100%	239 95	412 172
HBXCM66	639039	62	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	65% 77%	988 836	809 690
HBXCX15	637542	63	WUblastx. 64	(Q9GMX5) HYPOTHETICAL 12.9 KDA PROTEIN.	Q9GMX5	41% 52%	726 578	827 730
HCDBO32	831942	64	WUblastx. 64	(AAH17472) Hypothetical 21.3 kDa protein.	AAH17472	69% 100%	643 239	801 583
HCE2H52	847007	65	WUblastx. 64	probable transposase - human transposon MER37	pir S72481 S72481	60% 77% 75%	564 430 754	758 537 1251
HCE3B04	831151	66	WUblastx. 64	(O43466) HYPOTHETICAL 31.3 KDA PROTEIN (FRAGMENT).	O43466	98% 45%	836 217	1003 972
HCEEQ25	531784	69	WUblastx. 64	(P78349) SODIUM CHANNEL 2.	P78349	95% 93% 100%	311 433 658	433 480 714
HCEEU18	688041	70	WUblastx. 64	(Q9N083) UNNAMED PORTEIN PRODUCT.	Q9N083	49% 56%	186 1223	10 933



HCEFZ82	831745	71	WUblastx. 64	(Q9BV23) SIMILAR TO LIPASE PROTEIN.	Q9BV23	95% 100%	594 17	782 604
HCFLN88	610000	73	WUblastx. 64	(Q9BQE9) SIMILAR TO B-CELL CLL/LYMPHOMA 7B (UNKNOWN) (PROTEIN FOR MGC	Q9BQE9	87%	278	475
HCFLT90	788578	74	WUblastx. 64	(Q9CVC2) 2210013021RIK PROTEIN (FRAGMENT).	Q9CVC2	53% 70%	612 850	445 671
HCRAV10	695709	76	WUblastx. 64	(AAH08671) Similar to RIKEN cDNA 5530601119 gene.	AAH08671	77%	72	440
HCRBF72	828945	77	WUblastx. 64	(Q9UJ95) MITOTIC SPINDLE ASSEMBLY CHECKPOINT PROTEIN MAD2B	MD22_HUMAN	94%	191	823
HCUCF89	637986	80	WUblastx. 64	(Q9P147) PRO2822.	Q9P147	100% 82%	421 494	398 426
HCUCK44	790277	81	WUblastx. 64	hypothetical protein DKFZp564J157.1 - human (fragment)	pir T34520 T34520	100% 100%	29 377	157 403
HDPDI72	897277	89	WUblastx. 64	adult-specific brush border protein - rabbit	pir C45665 C45665	64% 83%	180 11	230 100
HDPFF10	853513	91	HMMER 2.1.1	PFAM: Leucine Rich Repeat	PF00560	65.1	729	800
HDPFU43	790189	92	WUblastx. 64	(AAH01057) Tyrosylprotein sulfotransferase 2.	AAH01057	100% 58%	360 220	1349 348
HDPIE44	899328	94	WUblastx. 64	(Q9D666) 4632417G13RIK PROTEIN.	Q9D666	62%	102	2453
HDPIU94	813352	95	WUblastx. 64	(Q9BVF7) SIMILAR TO HYPOTHETICAL PROTEIN FLJ10422.	Q9BVF7	99%	63	1703
HDPOL37	745377	96	WUblastx. 64	(AAK40301) TRH4.	AAK40301	70% 60%	502 1325	323 483
HDPWP82	778405	99	WUblastx. 64	hypothetical protein UL126 - human cytomegalovirus (strain AD169)	pir S09875 S09875	94%	6	116
HDTAU35	838139	101	WUblastx. 64	(Q9T9V8) NADH DEHYDROGENASE SUBUNIT 3.	Q9T9V8	87% 83%	56 305	175 340
HDTAV54	801898	102	WUblastx. 64	(AAH01231) Glutathione S-transferase subunit 13 hom	AAH01231	100%	13	303

HDTGW48	827285	103	WUblastx. 64	(Q9P1W8) SIRP-B2.	Q9P1W8	100% 79%	783 1359	1100 1757
HE6CS65	762960	108	WUblastx. 64	(Q9H7C6) CDNA: FLJ21047 FIS, CLONE CAS00253.	Q9H7C6	98%	938	1378
HE6DO92	562767	109	WUblastx. 64	gag polyprotein - human endogenous virus S71	pir A46312 A46312	63% 80%	623 19	895 633
HE6EY13	847058	110	WUblastx. 64	(Q95476) HYPOTHETICAL 28.3 KDA PROTEIN.	O95476	92%	5	472
HE8BQ49	589443	111	WUblastx. 64	hypothetical protein - human transposon MER37	pir S72482 S72482	75% 64%	343 105	474 248
HE8SG96	862016	112	WUblastx. 64	(Q9P195) PRO1722.	Q9P195	58% 63%	1997 1854	1845 1687
HE9CY05	834826	113	WUblastx. 64	(Q9CX63) 6030468B19RIK PROTEIN.	Q9CX63	48% 57%	434 55	742 426
HEAAW94	847340	115	WUblastx. 64	(Q9UEV9) ACTIN-BINDING PROTEIN HOMOLOG ABP-278.	Q9UEV9	94% 41%	285 285	890 884
HEBFR46	847064	119	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAIA0536.	Q9NX85	80% 84%	1111 1265	1022 1110
HEBGE07	798096	120	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAIA0536.	Q9NX85	79%	1851	1720
HELAT35	693175	121	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	72%	2092	1802
HELBUS4	637624	122	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	59%	1255	1031
HEMEY47	834491	123	WUblastx. 64	(Q9H387) PRO2550.	Q9H387	68% 74%	513 578	587 838
HEPBA14	855935	125	WUblastx. 64	(Q9BTY9) UNKNOWN (PROTEIN FOR IMAGE:2823490) (FRAGMENT).	Q9BTY9	87% 71% 92%	423 15 85	515 77 426
HEQA80	701984	126	WUblastx. 64	(Q9GMX5) HYPOTHETICAL 12.9 KDA PROTEIN.	Q9GMX5	60%	818	1045
HETDW58	790557	127	WUblastx. 64	unidentified 27.6K protein, spliced form A - human	pir JC7586 JC7586	95%	324	1058

HFEAY59	658685	131	WUblastx. 64	(Q9Z320) C29.	Q9Z320	67%	50	1153
HFEB017	852218	132	WUblastx. 64	(BAB55130) CDNA FLJ14559 fis, clone NT2RM2001998.	BAB55130	100%	523	624
HFGAJ16	580824	133	WUblastx. 64	CDM protein - human	pir S44279 S44279	91%	606	809
HFIIA29	839206	135	WUblastx. 64	(Q9UHT1) PRO1902 PROTEIN.	Q9UHT1	97%	263	403
HFIIA68	847074	136	WUblastx. 64	(Q9UHE8) SIX TRANSMEMBRANE EPITHELIAL ANTIGEN OF PROSTATE.	STEA_HUMAN	46%	889	806
HFKE05	827572	137	WUblastx. 64	(BAB55088) CDNA FLJ14496 fis, clone NT2RM1000035.	BAB55088	59%	1026	880
HFKEU12	634006	138	WUblastx. 64	hypothetical protein 3 - rat	pir S21347 S21347	89%	13	399
HFPDS07	821646	140	WUblastx. 64	(O94925) GLUTAMINASE, KIDNEY ISOFORM, MITOCHONDRIAL PRECURS	GLSK_HUMAN	85%	84	314
HFVKG35	731868	143	WUblastx. 64	(Q9GMX5) HYPOTHETICAL 12.9 KDA PROTEIN.	Q9GMX5	94%	367	1722
HFXBT66	580831	145	WUblastx. 64	(Q9H387) PRO2550.	Q9H387	52%	695	745
HGBER72	826710	147	WUblastx. 64	(Q9H387) PRO2550.	Q9H387	50%	757	933
HHEOW19	886174	152	WUblastx. 64	(O18973) RAB5 GDP/GTP EXCHANGE FACTOR, RABEX5.	O18973	40%	774	1007
HHFFFF87	778071	154	WUblastx. 64	coatomer zeta chain - bovine	pir A49465 A49465	54%	387	692
HHFFL34	753230	155	WUblastx.	(BAB55306) CDNA FLJ14793 fis, clone	BAB55306	78%	343	513
						74%	2	436
						65%	832	608
						73%	739	807
						58%	809	907
						62%	564	764
						71%	1061	969
						78%	1104	1063
						77%	1237	1103
						77%	417	623
						91%	611	715
						56%	166	378
						92%	129	167
						100%	50	145
						100%	9	710

HHFFS40	824059	156	64	NT2RP4001174, w (Q9H4A6) GOLGI PROTEIN.	Q9H4A6	100%	3	251
HHGDT26	658692	158	64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	69%	1580	1290
HHBSI65	801910	160	64	(Q9H5W9) CDNA: FLJ22888 FIS, CLONE KAT03934.	Q9H5W9	100%	270	407
HHSDI53	862028	161	64	(Q9H387) PRO2550.	Q9H387	94%	479	1300
HISBA38	561711	164	64	(Q9H387) PRO2550.	Q9H387	70%	1108	935
HJMAA03	824062	165	64	(Q9H387) PRO2550.	Q9H387	71%	1241	1107
HJMAV41	862029	166	64	(Q9N032) UNNAMED PROTEIN PRODUCT.	Q9N032	75%	1276	1241
HJMAV90	793678	167	64	brain-specific membrane anchor protein - human	pirJJC7110JJC7110	53%	919	836
HJPBE39	801960	168	64	(Q9DC16) 1200007D18RIK PROTEIN (RIKEN CDNA 1200007D18 GENE).	Q9DC16	53%	996	907
HJPCH08	840365	170	64	(Q9CUS4) 4833420K19RIK PROTEIN (FRAGMENT).	Q9CUS4	51%	842	687
HKABU43	838573	171	64	(Q95235) RABKINESIN-6 (RAB6- INTERACTING KINESIN-LIKE PROTEI	RB6K_HUMAN	71%	415	528
HKACI79	853361	172	64	(AAH03633) Translocase of outer mitochondrial membr	AAH03633	100%	33	62
HKAFF50	790192	173	64	(Q9BGV8) HYPOTHETICAL 10.0 KDA PROTEIN.	Q9BGV8	92%	26	1597
HKGBF25	738797	174	64	(Q9P1G7) PRO1777.	Q9P1G7	72%	886	1104
HKMLK03	734213	175	64	(Q9HBS7) HYPOTHETICAL 14.2 KDA PROTEIN.	Q9HBS7	99%	1753	1424
				(Q9N083) UNNAMED PORTEIN PRODUCT.	Q9N083	71%	1708	1688
						56%	1956	1708
						50%	981	832
						73%	856	731

HLDQU79	740755	179	WUblastx. 64	(O75477) KE04P.	O75477	100%	105	1142
HLDQU79	837599	390	blastx.2	KE04P.	sp O75477 O75477	99%	81	1118
HLDRT09	830544	180	WUblastx. 64	(Q9HAQ7) ATP-BINDING CASSETTE HALF-TRANSPORTER.	Q9HAQ7	86%	2	469
HLHAP05	638476	181	WUblastx. 64	(Q9HA67) CDNA FLJ12155 FIS, CLONE MAMMA1000472.	Q9HA67	55% 72% 77%	1553 1650 1807	1500 1585 1646
HLIBO72	883431	183	WUblastx. 64	(AAH07829) Similar to hypothetical protein AF140225	AAH07829	100%	65	547
HLICE88	840321	184	WUblastx. 64	fibrinogen gamma-A chain precursor [validated] - human	pir A90470 FGHUG	89%	3	584
HLMBW89	701996	187	WUblastx. 64	(AAH07983) Unknown (protein for MGC:16279).	AAH07983	85%	390	247
HLMGP50	647603	188	WUblastx. 64	(Q9GMI7) HYPOTHETICAL 9.0 KDA PROTEIN.	Q9GMI7	61% 72%	765 935	709 807
HLQAS12	886180	190	WUblastx. 64	(Q9XTA8) LECTIN-LIKE OXIDIZED LDL RECEPTOR.	Q9XTA8	71% 52%	690 364	842 711
HLQCL64	864966	191	HMMER 2.1.1	PFAM: Major intrinsic protein	PF00230	87.3	87	449
			WUblastx. 64	aquaporin 9 - human	pir JC5973 JC5973	98%	18	548
HLYGB19	838083	196	WUblastx. 64	(Q9H0Q1) HYPOTHETICAL 12.3 KDA PROTEIN.	Q9H0Q1	97%	204	518
HLYGY91	658703	198	WUblastx. 64	(Q9H8N0) CDNA FLJ13386 FIS, CLONE PLACE1001104, WEAKLY SIMILAR TO MYO	Q9H8N0	94%	221	391
HMDAB29	584789	200	WUblastx. 64	(Q9NX17) CDNA FLJ20489 FIS, CLONE KAT08285.	Q9NX17	72%	1186	890
HMEBB82	783077	202	WUblastx. 64	(Q9NSE4) MITOCHONDRIAL ISOLEUCINE TRNA SYNTHETASE (FRAGMENT).	Q9NSE4	99%	2	2206
HMEDE24	837027	203	WUblastx. 64	(Q9BVH9) SIMILAR TO GLUCOSE REGULATED PROTEIN, 58 KDA.	Q9BVH9	94% 42%	188 101	1159 742

HMELM75	587307	204	WUblastx. 64	(Q9NVW5) HYPOTHETICAL 31.3 KDA PROTEIN.	Q9NVW5	100%	137	391
HMICP65	847403	208	WUblastx. 64	(Q9HAU9) GUANINE NUCLEOTIDE BINDING PROTEIN BETA SUBUNIT 5L.	Q9HAU9	99% 22%	8 269	892 943
HMSBE04	709672	210	WUblastx. 64	(Q9H5V8) CDNA: FLJ22969 FIS, CLONE KAT10759.	Q9H5V8	85%	182	3
HMSCL38	801919	211	WUblastx. 64	(Q9P195) PRO1722.	Q9P195	64% 72% 64% 76%	1272 2918 2851 2769	1460 2844 2759 2653
HMSCR69	843059	212	HMMER 2.1.1	PFAM: Zinc finger present in dystrophin, CBP/p300	PF00569	48.2	113	250
			WUblastx. 64	(Q9BWK2) POTASSIUM CHANNEL MODULATORY FACTOR.	Q9BWK2	78%	107	1231
HMSHU20	847410	213	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	47%	1722	1453
HMTAB77	847411	215	WUblastx. 64	(P43243) MATRIN 3.	MAT3_HUMAN	95% 64% 22% 98% 31% 22% 23% 75% 27% 35% 35% 91%	630 287 2002 3255 2041 2047 2584 2440 2596 1705 3312 1384	1385 628 2175 3428 2190 2181 2763 2760 2709 1797 3404 2328
HMUA26	747403	216	WUblastx. 64	(Q9P2R4) SEVEN TRANSMEMBRANE DOMAIN ORPHAN RECEPTOR.	Q9P2R4	89% 86%	153 577	575 1272
HMVDU15	801969	217	WUblastx. 64	(Q9BTJ2) SIMILAR TO CGI-30 PROTEIN.	Q9BTJ2	100%	75	917
HMWJF53	758158	218	WUblastx.	(Q9GZU7) NUCLEAR LIM INTERACTOR-	Q9GZU7	91%	3	170

HNEAK81	722235	219	64	INTERACTING FACTOR. (Q9N083) UNNAMED PORTEIN PRODUCT.	Q9N083	100%	154	720
HNECL22	799541	220	WUblastx. 64	(Q9P0J2) MITOCHONDRIAL SOLUTE CARRIER.	Q9P0J2	94%	1771	2331
HNEHD88	815675	222	WUblastx. 64	(Q9GML5) HYPOTHETICAL 8.0 KDA PROTEIN.	Q9GML5	56%	1706	1849
HNFAC50	815676	223	WUblastx. 64	(Q9H286) SEROLOGICALLY DEFINED BREAST CANCER ANTIGEN NY-BR-20 (FRAGME	Q9H286	100%	425	282
HNFHF34	722237	224	WUblastx. 64	(Q9NZX0) HSPC068.	Q9NZX0	100% 34% 35% 33% 32%	9 9 3 9 129	431 404 407 407 422
HNGAM58	688114	225	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	71% 85% 53%	1020 1081 818	1061 1143 1003
HNGJB41	852178	233	WUblastx. 64	probable oxysterol-binding protein DJ430N08.1 - human (fragment)	pir T02435 T02435	100%	128	9
HNHCT47	634691	238	WUblastx. 64	(Q9H728) CDNA: FLJ21463 FIS, CLONE COL04765.	Q9H728	46% 56%	434 621	396 448
HNHFE71	834487	239	WUblastx. 64	hypothetical protein DKFZp761L0812.1 - human (fragment)	pir T47135 T47135	67%	822	583
HNHKG22	597451	240	WUblastx. 64	hypothetical protein (L1H 3' region) - human	pir B34087 B34087	41% 41% 50%	483 333 733	37 10 485
HNHHB10	634589	241	WUblastx. 64	(Q9BVD9) UNKNOWN (PROTEIN FOR MGC:5149).	Q9BVD9	70% 73% 73%	658 845 717	608 711 661
HNHKI74	777856	242	WUblastx. 64	(Q9BGX7) HYPOTHETICAL 13.0 KDA PROTEIN.	Q9BGX7	64%	350	541
HNTBT17	855957	243	WUblastx.	(Q9NZF3) BM-001.	Q9NZF3	45%	818	1342





HPFC136	855966	265	WUblastx. 64	(Q9NX47) CDNA FLJ20445 FIS, CLONE KAT05170.	Q9NX47	79%	394	128
HPJBU43	862058	266	WUblastx. 64	(Q9P1E1) PRO2221.	Q9P1E1	54%	187	44
HPMCJ84	562779	268	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAI0536.	Q9NX85	74% 69%	619 759	479 613
HPMCV30	612870	269	WUblastx. 64	(Q9BVD9) UNKNOWN (PROTEIN FOR MGC:5149).	Q9BVD9	76% 68%	384 590	334 399
HPTRM02	812879	272	WUblastx. 64	(Q9JUJ6) SRC HOMOLOG 3 DOMAIN-CONTAINING PROTEIN HIP-55 (DREBRIN F).	Q9JUJ6	92% 97% 96%	332 2 98	940 106 190
HRADA42	827302	275	WUblastx. 64	hypothetical protein C11D2.4 - Caenorhabditis elegans	pir T32961 T32961	48% 74%	387 668	668 931
HRADF49	866481	276	WUblastx. 64	(Q9H6L1) CDNA: FLJ22169 FIS, CLONE HRC00632.	Q9H6L1	90% 84% 75% 34%	13 813 1291 1590	825 1379 1593 1685
HRADN25	800628	277	WUblastx. 64	(Q9HB07) MYG1 PROTEIN.	MYG1_HUMAN	96%	47	1174
HRDAI17	560720	279	WUblastx. 64	(Q9NUM6) CDNA FLJ11267 FIS, CLONE PLACE1009174.	Q9NUM6	59%	1305	1475
HRDDQ39	840405	280	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAI0536.	Q9NX85	53% 65%	582 775	436 578
HRDER22	688056	281	WUblastx. 64	(Q9NW07) CDNA FLJ10390 FIS, CLONE NT2RM4000104, MODERATELY SIMILAR TO	Q9NW07	80% 100% 39% 28% 38%	9 357 120 15 254	248 431 227 203 316
HRDFK37	840381	282	WUblastx. 64	(Q9P195) PRO1722.	Q9P195	69% 40%	536 50	652 115
HRGBD54	828436	283	WUblastx. 64	(O95819) HPK/GCK-LIKE KINASE HGK.	O95819	51% 74%	32 253	253 645



			2.1.1		(O75792) RIBONUCLEASE HI LARGE SUBUNIT (EC 3.1.26.-) (RNASE)	RNHL_HUMAN	91%	156	635
			WUblastx. 64				99%	587	1051
HSWBE76	751308	305	WUblastx. 64		(Q9NW15) CDNA FLJ10375 FIS, CLONE NT2RM2001950.	Q9NW15	100%	126	266
HSXCP38	895392	306	WUblastx. 64		hydroxymethylglutaryl-CoA lyase (EC 4.1.3.4) - chicken	pir B45470 B45470	70%	17	895
HSYBI06	740766	307	WUblastx. 64		(Q9BGV8) HYPOTHETICAL 10.0 KDA PROTEIN.	Q9BGV8	69%	916	954
HT5GR59	801930	309	WUblastx. 64		(O60496) DOCKING PROTEIN.	O60496	78%	821	913
HTAEI78	637684	310	WUblastx. 64		(Q9UKQ2) ADAM 28 PRECURSOR (EC 3.4.24.-) (A DISINTEGRIN AND	AD28_HUMAN	72%	70	1284
HTDAA78	566861	311	WUblastx. 64		(Q9D8E7) 5830443F10RIK PROTEIN.	Q9D8E7	90%	85	174
HTECB02	806305	312	WUblastx. 64		(AAK39520) BTB domain protein (Fragment).	AAK39520	58%	84	302
HTEEW69	764835	315	WUblastx. 64		(Q9ZIH7) GSG1.	Q9ZIH7	95%	33	1211
							65%	850	927
							85%	707	769
							50%	519	662
							66%	908	943
							65%	182	544
HTEGS07	827700	316	WUblastx. 64		(Q9D143) 1110030K22RIK PROTEIN.	Q9D143	96%	183	593
HTEMQ17	840387	320	WUblastx. 64		(Q9D4P8) 4930579G24RIK PROTEIN.	Q9D4P8	90%	120	359
HTGBK95	834490	321	WUblastx. 64		(Q9GMX5) HYPOTHETICAL 12.9 KDA PROTEIN.	Q9GMX5	66%	126	55
HTLBT80	840045	323	WUblastx. 64		(Q9NQQ7) BA39402.1 (CGI-15 PROTEIN).	Q9NQQ7	70%	235	116
							76%	1214	1405
							74%	804	1223
							47%	780	845
							78%	313	825
HTLDA84	686397	324	WUblastx.		(Q9H387) PRO2550.	Q9H387	79%	1265	1134



				WUblastx. 64	(P03989) HLA CLASS I HISTOCOMPATIBILITY ANTIGEN, B-27 ALPHA	1B14_HUMAN	63%	880	945
HTXJD85	840391	352		WUblastx. 64	(Q9HAD8) CDNA FLJ11786 FIS, CLONE HEMBA1006036.	Q9HAD8	71% 80%	65 282	256 863
HTXMZ07	834881	354		WUblastx. 64	(Q9BRF3) SIMILAR TO RIKEN CDNA 2810468K17 GENE.	Q9BRF3	90%	3	1469
HUFCL31	801938	355		WUblastx. 64	(Q9D311) 9030623N16RIK PROTEIN.	Q9D311	60%	280	1224
HUKDY82	570896	357		WUblastx. 64	(Q9HA67) CDNA FLJ12155 FIS, CLONE MAMMA1000472.	Q9HA67	59%	1405	1145
HUSCJ14	894699	358		WUblastx. 64	tex261 protein - mouse	pir S47481 S47481	99%	74	661
HUSGL67	792637	359		WUblastx. 64	(Q9Y2G2) CARD DOMAIN PROTEIN 8 (APOPTOTIC PROTEIN NDPP1) (D	CRD8_HUMAN	100% 65% 97%	347 947 469	421 1006 954
HUSGU40	684975	360		WUblastx. 64	(Q9BX98) UBIQUITIN A-52 RESIDUE RIBOSOMAL PROTEIN FUSION PRODUCT 1 (F	Q9BX98	75%	840	433
HUVDJ48	564853	362		WUblastx. 64	SHORT ISOFORM OF Q9P2N4	sp_vs Q9P2N4- 01 Q9P2N4	92%	1510	1668
HWAAl12	830432	363		WUblastx. 64	(Q9BWW4) SINGLE STRANDED DNA BINDING PROTEIN-1.	Q9BWW4	82% 87% 69% 36% 37%	512 92 941 521 752	829 394 1252 685 826
HWBBU75	780360	365		WUblastx. 64	(Q9R189) MUNC13-4 PROTEIN.	Q9R189	82% 73% 80% 62% 31% 34%	1454 913 194 2229 1586 401	2362 1434 952 2729 1711 532
HWBCN36	722259	366		WUblastx.	(Q9BGW3) HYPOTHETICAL 13.5 KDA	Q9BGW3	69%	1007	900

HWBDJ08	762860	367	64	PROTEIN. probable pol polyprotein-related protein 4 - rat	pir S21348 S21348	57%	887	846
HWDA96	796743	369	WUblastx. 64	(AAH01119) Integrin beta 4 binding protein.	AAH01119	100%	108	842
HWHPB78	740778	371	WUblastx. 64	(Q9BUK4) SIMILAR TO HYPOTHETICAL PROTEIN FLJ10709.	Q9BUK4	61% 100%	360 677	614 817
HWLGP26	834770	373	WUblastx. 64	(Q9NP87) DNA POLYMERASE MU.	Q9NP87	93% 100% 94% 87% 100%	674 269 295 432 3	760 298 465 623 254
HILCA24	869856	374	WUblastx. 64	(Q9NUU6) CDNA FLJ11127 FIS, CLONE PLACE1006225.	Q9NUU6	95%	104	1171
HILCA24	782450	393	WUblastx. 64	(Q9NUU6) CDNA FLJ11127 FIS, CLONE PLACE1006225.	Q9NUU6	73% 100%	103 168	159 1169
HE2CA60	888705	375	WUblastx. 64	(O95232) OKADAIC ACID-INDUCIBLE PHOSPHOPROTEIN OA48-18.	OA48_HUMAN	98%	1098	1265
HPWTF23	844775	376	HMMER 2.1.1	PFAM: TSC-22/dip/bun family	PF01166	146.4	442	621
			WUblastx. 64	(Q99576) GLUCOCORTICOID-INDUCED LEUCINE ZIPPER PROTEIN (DEL	GILZ_HUMAN	94%	271	672
HPWTF23	843700	395	HMMER 2.1.1	PFAM: TSC-22/dip/bun family	PF01166	146.4	442	621
			WUblastx. 64	(Q99576) GLUCOCORTICOID-INDUCED LEUCINE ZIPPER PROTEIN (DEL	GILZ_HUMAN	94%	271	672
HPQAX38	845752	379	WUblastx. 64	(Q9BGV8) HYPOTHETICAL 10.0 KDA PROTEIN.	Q9BGV8	74% 68%	664 543	768 674
HPQAX38	843592	399	WUblastx. 64	(Q9BGV8) HYPOTHETICAL 10.0 KDA PROTEIN.	Q9BGV8	74% 68%	664 543	768 674
HEQB101	876546	380	WUblastx. 64	(Q9LVQ7) ZINC FINGER PROTEIN.	Q9LVQ7	34%	424	849

HEQBJ01	861786	400	WUblastx. 64	(Q9LVQ7) ZINC FINGER PROTEIN.	Q9LVQ7	34%	424	849
HTOJL95	762851	381	WUblastx. 64	(Q15401) LINE-1 REPEAT MRNA WITH 2 OPEN READING FRAMES.	Q15401	36% 59% 71%	683 966 607	609 820 248
HTOJL95	806212	402	WUblastx. 64	(Q15605) ORF1 CODES FOR A 40 KDA PRODUCT.	Q15605	86% 57% 57%	192 876 751	61 730 161
HTEEF26	879704	383	WUblastx. 64	(Q9H7X7) CDNA FLJ14117 FIS, CLONE MAMMA1001785.	Q9H7X7	81%	80	634
HTEEF26	789606	408	WUblastx. 64	(Q9H7X7) CDNA FLJ14117 FIS, CLONE MAMMA1001785.	Q9H7X7	81%	80	634
HE8FC45	845672	388	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAIA0536.	Q9NX85	50% 57% 75%	1285 1824 1672	1172 1663 1553
HE8FC45	843781	413	WUblastx. 64	(Q9NX85) CDNA FLJ20378 FIS, CLONE KAIA0536.	Q9NX85	50% 57% 75%	1285 1824 1672	1172 1663 1553

### ***RACE Protocol For Recovery of Full-Length Genes***

Partial cDNA clones can be made full-length by utilizing the rapid amplification of cDNA ends (RACE) procedure described in Frohman, M.A., et al., Proc. Nat'l. Acad. Sci. USA, 85:8998-9002 (1988). A cDNA clone missing either the 5' or 3' end can be reconstructed to include the absent base pairs extending to the translational start or stop codon, respectively. In some cases, cDNAs are missing the start codon of translation, therefore. The following briefly describes a modification of this original 5' RACE procedure. Poly A<sup>+</sup> or total RNA is reverse transcribed with Superscript II (Gibco/BRL) and an antisense or complementary primer specific to the cDNA sequence. The primer is removed from the reaction with a Microcon Concentrator (Amicon). The first-strand cDNA is then tailed with dATP and terminal deoxynucleotide transferase (Gibco/BRL). Thus, an anchor sequence is produced which is needed for PCR amplification. The second strand is synthesized from the dA-tail in PCR buffer, Taq DNA polymerase (Perkin-Elmer Cetus), an oligo-dT primer containing three adjacent restriction sites (XhoI, SalI and ClaI) at the 5' end and a primer containing just these restriction sites. This double-stranded cDNA is PCR amplified for 40 cycles with the same primers as well as a nested cDNA-specific antisense primer. The PCR products are size-separated on an ethidium bromide-agarose gel and the region of gel containing cDNA products the predicted size of missing protein-coding DNA is removed. cDNA is purified from the agarose with the Magic PCR Prep kit (Promega), restriction digested with XhoI or SalI, and ligated to a plasmid such as pBluescript SKII (Stratagene) at XhoI and EcoRV sites. This DNA is transformed into bacteria and the plasmid clones sequenced to identify the correct protein-coding inserts. Correct 5' ends are confirmed by comparing this sequence with the putatively identified homologue and overlap with the partial cDNA clone. Similar methods known in the art and/or commercial kits are used to amplify and recover 3' ends.

Several quality-controlled kits are commercially available for purchase. Similar reagents and methods to those above are supplied in kit form from Gibco/BRL for both 5' and 3' RACE for recovery of full length genes. A second kit is available from Clontech which is a modification of a related technique, SLIC (single-stranded ligation to single-stranded cDNA), developed by Dumas et al., Nucleic Acids Res., 19:5227-32 (1991). The major differences in procedure are that the RNA is alkaline hydrolyzed after reverse transcription and RNA ligase is used to join a restriction site-containing anchor primer to the first-strand cDNA. This obviates the necessity for the dA-tailing reaction which results in a polyT stretch that is difficult to sequence past.

An alternative to generating 5' or 3' cDNA from RNA is to use cDNA library double-stranded DNA. An asymmetric PCR-amplified antisense cDNA strand is synthesized with an antisense cDNA-specific primer and a plasmid-anchored primer. These primers are removed and a



symmetric PCR reaction is performed with a nested cDNA-specific antisense primer and the plasmid-anchored primer.

***RNA Ligase Protocol For Generating The 5' or 3' End Sequences To Obtain Full Length Genes***

5           Once a gene of interest is identified, several methods are available for the identification of the 5' or 3' portions of the gene which may not be present in the original cDNA plasmid. These methods include, but are not limited to, filter probing, clone enrichment using specific probes and protocols similar and identical to 5' and 3' RACE. While the full length gene may be present in the library and can be identified by probing, a useful method for generating the 5' or 3' end is to use the existing sequence information from the original cDNA to generate the missing information. A method similar to 5' RACE is available for generating the missing 5' end of a desired full-length gene. (This method was published by Fromont-Racine et al., *Nucleic Acids Res.*, 21(7):1683-1684 (1993)). Briefly, a specific RNA oligonucleotide is ligated to the 5' ends of a population of RNA presumably containing full-length gene RNA transcript and a primer set containing a primer specific to the ligated RNA oligonucleotide and a primer specific to a known sequence of the gene of interest, is used to PCR amplify the 5' portion of the desired full length gene which may then be sequenced and used to generate the full length gene. This method starts with total RNA isolated from the desired source, poly A RNA may be used but is not a prerequisite for this procedure. The RNA preparation may then be treated with phosphatase if necessary to eliminate 5' phosphate groups on degraded or damaged RNA which may interfere with the later RNA ligase step. The phosphatase if used is then inactivated and the RNA is treated with tobacco acid pyrophosphatase in order to remove the cap structure present at the 5' ends of messenger RNAs. This reaction leaves a 5' phosphate group at the 5' end of the cap cleaved RNA which can then be ligated to an RNA oligonucleotide using T4 RNA ligase. This modified RNA preparation can then be used as a template for first strand cDNA synthesis using a gene specific oligonucleotide. The first strand synthesis reaction can then be used as a template for PCR amplification of the desired 5' end using a primer specific to the ligated RNA oligonucleotide and a primer specific to the known sequence of the gene of interest. The resultant product is then sequenced and analyzed to confirm that the 5' end sequence belongs to the relevant gene.

30           The present invention also relates to vectors or plasmids which include such DNA sequences, as well as the use of the DNA sequences. The material deposited with the ATCC (e.g., as described in columns 2 and 3 of Table 1A, and/or as set forth in Table 1B, Table 6, or Table 7) is a mixture of cDNA clones derived from a variety of human tissue and cloned in either a plasmid vector or a phage vector, as described, for example, in Table 1A and Table 7. These deposits are referred to as "the deposits" herein. The tissues from which some of the clones were derived are listed in Table 7, and the vector in which the corresponding cDNA is contained is also indicated in

Table 7. The deposited material includes cDNA clones corresponding to SEQ ID NO:X described, for example, in Table 1A and/or Table 1B (ATCC Deposit No:Z). A clone which is isolatable from the ATCC Deposits by use of a sequence listed as SEQ ID NO:X, may include the entire coding region of a human gene or in other cases such clone may include a substantial portion of the coding region of a human gene. Furthermore, although the sequence listing may in some instances list only a portion of the DNA sequence in a clone included in the ATCC Deposits, it is well within the ability of one skilled in the art to sequence the DNA included in a clone contained in the ATCC Deposits by use of a sequence (or portion thereof) described in, for example Tables 1A and/or Table 1B or Table 2, by procedures hereinafter further described, and others apparent to those skilled in the art.

Also provided in Table 1A and Table 7 is the name of the vector which contains the cDNA clone. Each vector is routinely used in the art. The following additional information is provided for convenience.

Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128, 256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. et al., *Nucleic Acids Res.* 16:7583-7600 (1988); Alting-Mees, M. A. and Short, J. M., *Nucleic Acids Res.* 17:9494 (1989)) and pBK (Alting-Mees, M. A. et al., *Strategies* 5:58-61 (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into *E. coli* strain XL-1 Blue, also available from Stratagene.

Vectors pSport1, pCMVSPORT 1.0, pCMVSPORT 2.0 and pCMVSPORT 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., et al., *Focus* 15:59- (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR<sup>®</sup>2.1, which is available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res.* 16:9677-9686 (1988) and Mead, D. et al., *Bio/Technology* 9: (1991).

The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or the deposited clone (ATCC Deposit No:Z). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include preparing probes or primers from the disclosed sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

Also provided in the present invention are allelic variants, orthologs, and/or species homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of genes corresponding to SEQ ID NO:X or the complement thereof, polypeptides encoded by genes corresponding to SEQ ID NO:X or the complement thereof, and/or the cDNA contained in ATCC Deposit No:Z, using information from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

The polypeptides of the invention can be prepared in any suitable manner. Such polypeptides include isolated naturally occurring polypeptides, recombinantly produced polypeptides, synthetically produced polypeptides, or polypeptides produced by a combination of these methods. Means for preparing such polypeptides are well understood in the art.

The polypeptides may be in the form of the secreted protein, including the mature form, or may be a part of a larger protein, such as a fusion protein (see below). It is often advantageous to include an additional amino acid sequence which contains secretory or leader sequences, pro-sequences, sequences which aid in purification, such as multiple histidine residues, or an additional sequence for stability during recombinant production.

The polypeptides of the present invention are preferably provided in an isolated form, and preferably are substantially purified. A recombinantly produced version of a polypeptide, including the secreted polypeptide, can be substantially purified using techniques described herein or otherwise known in the art, such as, for example, by the one-step method described in Smith and Johnson, Gene 67:31-40 (1988). Polypeptides of the invention also can be purified from natural, synthetic or recombinant sources using techniques described herein or otherwise known in the art, such as, for example, antibodies of the invention raised against the polypeptides of the present invention in methods which are well known in the art.

The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X, and/or the cDNA sequence contained in ATCC Deposit No:Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X or a complement thereof, a polypeptide encoded by the cDNA contained in ATCC Deposit No:Z, and/or the polypeptide sequence encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 of Table 1C. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, a polypeptide encoded by the cDNA contained in ATCC Deposit No:Z, and/or a polypeptide sequence encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 of Table 1C

are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of, the complement of the nucleic acid sequence of SEQ ID NO:X, a nucleic acid sequence encoding a polypeptide encoded by the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the cDNA contained in ATCC Deposit No:Z.

5           Moreover, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in Table 1C column 6, or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences  
10       delineated in Table 1C column 6, or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in Table 1C, column 6, and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1C, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or  
15       alternatively consist of, sequences delineated in Table 1C, column 6, and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in Table 1C, column 6, and have a nucleic acid sequence which is different from that contained in the BAC clone identified as  
20       BAC ID NO:A (see Table 1C, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

          Further, representative examples of polynucleotides of the invention comprise, or  
25       alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1C which correspond to the same Clone ID (see Table 1C, column 1), or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in column 6 of Table  
30       1C which correspond to the same Clone ID (see Table 1C, column 1), or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same Clone ID (see Table 1C, column 1) and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1C, column 5). In  
35       additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same

Clone ID (see Table 1C, column 1) and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same Clone ID (see Table 1C, column 1) and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

Further, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1C which correspond to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column 2), or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in column 6 of Table 1C which correspond to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column 2), or any combination thereof. In further embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column 2) and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1C, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column 2) and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in column 6 of Table 1C which correspond to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column 2) and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (See Table 1C, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides and polypeptides are also encompassed by the invention.

Moreover, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the

sequences delineated in the same row of Table 1C column 6, or any combination thereof. Additional, representative examples of polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in the same row of Table 1C column 6, or any combination thereof. In preferred embodiments, the polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the complementary strand(s) of the sequences delineated in the same row of Table 1C column 6, wherein sequentially delineated sequences in the table (i.e. corresponding to those exons located closest to each other) are directly contiguous in a 5' to 3' orientation. In further embodiments, above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1C, column 6, and have a nucleic acid sequence which is different from that of the BAC fragment having the sequence disclosed in SEQ ID NO:B (see Table 1C, column 5). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1C, column 6, and have a nucleic acid sequence which is different from that published for the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). In additional embodiments, the above-described polynucleotides of the invention comprise, or alternatively consist of, sequences delineated in the same row of Table 1C, column 6, and have a nucleic acid sequence which is different from that contained in the BAC clone identified as BAC ID NO:A (see Table 1C, column 4). Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1C, and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1C, column 2) or fragments or variants thereof. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in column 6 of Table 1C which correspond to the same Clone ID (see Table 1C, column 1), and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1A, Table 1B, or Table 1C) or fragments or variants thereof. In preferred embodiments, the delineated sequence(s) and polynucleotide sequence of SEQ ID NO:X correspond to the same Clone ID. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

In further specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, one, two, three, four, five, six, seven, eight, nine, ten, or more of the sequences delineated in the same row of column 6 of Table 1C, and the polynucleotide sequence of SEQ ID NO:X (e.g., as defined in Table 1A, Table 1B, or Table 1C) or fragments or variants thereof. In preferred embodiments, the delineated sequence(s) and polynucleotide sequence of SEQ ID NO:X correspond to the same row of column 6 of Table 1C. Polypeptides encoded by these polynucleotides, other polynucleotides that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C and the 5' 10 polynucleotides of the sequence of SEQ ID NO:X are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids that encode these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In additional specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C and the 5' 10 polynucleotides of a fragment or variant of the sequence of SEQ ID NO:X are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of the sequence of SEQ ID NO:X and the 5' 10 polynucleotides of the sequence of one of the sequences delineated in column 6 of Table 1C are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention.

Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of a fragment or variant of the sequence of SEQ ID NO:X and the 5' 10 polynucleotides of the sequence of one of the sequences delineated in column 6 of Table 1C are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides, are also encompassed by the invention.

In further specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C and the 5' 10 polynucleotides of another sequence in column 6 are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C and the 5' 10 polynucleotides of another sequence in column 6 corresponding to the same Clone ID (see Table 1C, column 1) are directly contiguous. Nucleic acids which hybridize to the complement of these 20 lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of, a polynucleotide sequence in which the 3' 10 polynucleotides of one sequence in column 6 corresponding to the same contig sequence identifier SEQ ID NO:X (see Table 1C, column



2) are directly contiguous. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

In specific embodiments, polynucleotides of the invention comprise, or alternatively consist of a polynucleotide sequence in which the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C and the 5' 10 polynucleotides of another sequence in column 6 corresponding to the same row are directly contiguous. In preferred embodiments, the 3' 10 polynucleotides of one of the sequences delineated in column 6 of Table 1C is directly contiguous with the 5' 10 polynucleotides of the next sequential exon delineated in Table 1C, column 6. Nucleic acids which hybridize to the complement of these 20 contiguous polynucleotides under stringent hybridization conditions or alternatively, under lower stringency conditions, are also encompassed by the invention. Polypeptides encoded by these polynucleotides and/or nucleic acids, other polynucleotides and/or nucleic acids encoding these polypeptides, and antibodies that bind these polypeptides are also encompassed by the invention. Additionally, fragments and variants of the above-described polynucleotides, nucleic acids, and polypeptides are also encompassed by the invention.

### Table 3

Many polynucleotide sequences, such as EST sequences, are publicly available and accessible through sequence databases and may have been publicly available prior to conception of the present invention. Preferably, such related polynucleotides are specifically excluded from the scope of the present invention. Accordingly, for each contig sequence (SEQ ID NO:X) listed in the fifth column of Table 1A and/or the fourth column of Table 1B, preferably excluded are one or more polynucleotides comprising a nucleotide sequence described by the general formula of a-b, where a is any integer between 1 and the final nucleotide minus 15 of SEQ ID NO:X, b is an integer of 15 to the final nucleotide of SEQ ID NO:X, where both a and b correspond to the positions of nucleotide residues shown in SEQ ID NO:X, and where b is greater than or equal to a + 14. More specifically, preferably excluded are one or more polynucleotides comprising a nucleotide sequence described by the general formula of a-b, where a and b are integers as defined in columns 4 and 5, respectively, of Table 3. In specific embodiments, the polynucleotides of the invention do not consist of at least one, two, three, four, five, ten, or more of the specific polynucleotide sequences referenced by the Genbank Accession No. as disclosed in column 6 of Table 3 (including

for example, published sequence in connection with a particular BAC clone). In further embodiments, preferably excluded from the invention are the specific polynucleotide sequence(s) contained in the clones corresponding to at least one, two, three, four, five, ten, or more of the available material having the accession numbers identified in the sixth column of this Table  
5 (including for example, the actual sequence contained in an identified BAC clone). In no way is this listing meant to encompass all of the sequences which may be excluded by the general formula, it is just a representative example. All references available through these accessions are hereby incorporated by reference in their entirety.

Table 3

cDNA Clone ID	SEQ ID NO: X	Contig ID:	EST Disclaimer Range of a Range of b	Accession Numbers
H6BSF56	11	762968	1 - 591 15 - 605	<p>AW958287, BF027085, AV650800, AV650218, BF689895, BE409727, BE871017, BE278963, BF975253, AA449214, AA150070, BF247445, AA310756, BF3337859, AA425098, BE746295, BE732859, BE742068, R48107, BF129114, AA393871, AI707816, AI523073, AW002940, BE672910, BF764476, AW827130, AA468022, AA493695, AW857950, AW275510, AW857971, BF667587, AW021735, R52299, AW965008, AI223604, AI254279, BE179557, BG059450, AW963750, AI445674, AW979031, AV703942, AV762535, AI687343, BG249643, AA769402, AW827120, AA484373, AI345157, AV739452, AW168618, AW504900, AA467876, BF887977, AV710066, AV763354, AV762098, AI744826, BF964993, AA279421, AW302903, AW872575, AI700109, BF437493, AV764329, BE253048, AW270343, AL046205, BE782280, BF677892, AV759437, AV734583, AV760777, AV760486, BF965007, BE907585, AV764578, AW131249, BE297262, BF347740, BF337291, BF679274, AW193265, AI247199, BF347791, AV764307, AV763183, AW235497, AA747070, BF760796, AW872676, AI004704, AW002350, AI270117, AI311927, BF871137, BE883107, AL043009, AI754658, AI250083, AV760258, AW069769, AI370094, AL119691, AW063143, AI270559, AA372481, AV760937, AL119713, AW857949, BF742624, AA720702, BE736829, BF681649, AI953275, AA490183, AF330238, AW970871, AU145314, BF977376, AL138265, AV759172, AV761106, AV735614, AW953071, AA019312, AA584167, AV728425, AU121243, AV763847, AL038799, AV733830, BF965154, BG026806, AI133164, AA523841, AV763540, AV762050, AI470646, AI284640, AI307022, AA635739, AI350211, BE350772, AI691091, AI251082, AI370074, BF936005, AI305766, AI732378, AI860013, AV744393, AW974109, AW500125, AV760378, AV734666, AV764241, AL037683, AL038705, AA683238, BG023888, BC001419.1, AK025830.1, AF151821.1, AC004760.1, AC010679.6, AC005089.2, AC005988.1, AL161908.13, AL049766.14, AC005257.1, AL117377.18, AL109936.10, AC009311.3, AC007383.4, AC018637.3, AL161445.10, AL034545.1, L78833.1, AC023908.6, AC005250.1, AC073964.3, AC006511.5, AC0073520.6, AL136223.11, Z95115.1, AC006999.2, AC005606.2, AL022322.1, AC007011.1, AC007279.4, AC007428.5, AP000893.5, AC002476.1, AP002852.3, AC008507.8, AL049795.20, AC016576.7, Z98051.6, AC011508.4, AP003357.2, AL021393.1, AC006285.11, AC005923.2, AL137839.6, AC009309.4, AC003101.1, AL121934.17, AC020893.5, AC004638.1, AP001753.1, AC007620.30, AC010524.6, AF215937.1, AL117332.16, AL022163.1, AC008482.5, AC006077.1, AC022432.4, AC011559.3, AC020658.6, AL161756.6, AC025262.27, AC018711.4, AL121586.31, AC004849.1, AC019215.4, AL357314.11, AC005071.2, AC090959.1, AL391987.15, AL022238.1, AL034423.21, AC006275.1, AL354720.14, AC002314.1, Z82198.2, AC073136.6, AL137780.10, AL358943.13, AC005694.3, AC008744.6, AC010422.7, AL137128.4, AF252830.3, AL135838.5,</p>

					AL353692.14, AC004686.1, AL121751.12, AC004814.2, AC024084.4, AC005280.3, AL133367.4, AC007192.1, AC002430.1, AL157938.22, AL160471.5, AP001680.1, AL031777.4, AL353748.13, AL021807.2, AL136131.15, AC002395.1, AL136969.7, AL020997.1, AP001646.4, AC018633.2, AC005258.2, AL118501.22, AC018720.5, AL135818.3, AC004008.1, AC006111.3, AL035462.21, AC002470.17, AC016025.12, AC007384.3, AC018712.5, AL136308.4, AC073347.3, AL035667.12, AC004876.2, AC009094.7, AC005020.5, AC002425.1, AL109823.23, AL034420.16, AC007216.2, AC004650.1, AC010465.7, AC006357.5, AL157912.5, AC007225.2, AL078611.1, AF001549.1, Z69706.1, AP001725.1, AL049544.4, AL121892.9, U63630.3, AL499629.1, AC010271.6, AL008725.1, AL021939.1, AL445687.5, AC008670.4, AF254822.1, AC002531.1, AL121601.13, AL022237.1, AC004388.1, AC011310.3, AL450104.14, AC017088.8, AL031311.1, AC005527.3, AL050349.27, Z68162.1, AL121903.13, AC007546.5, AC020917.4, AC025457.5, AL139186.16, Z93241.11, AC015853.8, AC020934.7, AF117829.1, Z82190.1, AC022150.5, AP003471.2, AC013414.7, AL360227.17, AL157931.17, AC004980.4, AL121897.32, AC004622.1, Z83844.5, AC005288.1, AL356481.16, AP001687.1, AL157858.5, AL031286.1, AC022027.5, AC009144.5, AL117258.4, AC005821.1, AC004899.1, AL391839.9, AL356414.11, AP001746.1, AL353668.18, AL365223.19, Z97196.1, AL109921.21, AC012476.8, AF015262.2, AL031662.26, AC016643.6, AC004598.1, AC015555.13, Z83845.14, AL158850.8, AC008372.6, AL080242.11, AL137061.12, AC012309.7, AC004659.1, AL359219.4, AL354707.17, AL229043.1, AL139113.21, AL590611.7, AL590283.7, AL137853.12, AC008770.6, AF228703.1, AC011477.5, AC020916.7, AC008521.5, AL021578.4, M63796.1, AL009181.1, AC006312.8, AC073657.5, AC024561.4, AC004755.2, AC005488.2, AC005274.1, AC006130.1, AP001721.1, AC022083.6, AC021752.5, AL008712.1, AC004534.1, AC023105.7, AE006462.1, AC006277.1, AL451126.18, AL352978.6, AL133282.15, AC005529.7, AC073138.3, U63312.1, AC016395.4, AC005484.2, AC005531.1, AL033520.16.
H6EEC72	12	889401	1 - 1479	15 - 1493	BF034355, BF034892, BE792423, BF338898, BG105853, BE390915, BE613966, AA449897, BE389478, AW857371, AW861388, BE891738, R71843, BF983885, BF739366, AL688525, BF591064, AL589048, AL933344, BE387873, AL660119, AL950422, BF830644, AA250941, W68171, BE613313, BE389218, AA699649, BE612723, AL553767, BG178871, BE966158, AW965656, AL807258, AW606086, W67712, N34048, AA789094, AL160489, AA953906, AA029513, AL1798377, AA961141, AL191879, AL277742, BF757878, AL341511, BF941471, T79588, W39291, BF843992, BF761673, BE552032, AW938641, AL684229, AL829091, AL696662, H79702, AL803066, AL423727, AW081674, AW014236, AW582288, BE675078, AL760447, BE042621, AA250965, AL991516, AW438983, AW205754, AL658602, AW594379, AA449841, BF926493, AL955308, AL917867, BF063286, AA029448, AL933496, AA350855, R71793, AW578255, BE829073, BE828899, AB014591.1, AL133647.1, AF180474.1, AF211967.1.
HACAB68	13	584773	1 - 1286	15 - 1300	BF967733, BF340072, AW058572, BE877116, BF029667, BE221318, BE042897, BF434234, BE966145, BF593609, AW966641, BE549675, AL692588, BF433926, W68167, AW674743, W67708, BG163487, AL802057, AW051536, AW005086, BE073104, AU145008, AL634647, AL743810, N51396, BE218196, AL857811, AL816124, AL802067, AL095027, BE503637, BF669349, AL925492, BE669954, AL813855,

					<p>AI811403, BG236435, AA833834, BE073105, AA748470, AW975666, BE502705, N56917, AI146547, AI949209, AI492350, AI190896, BE219670, AI167132, AW013890, AI089941, AI810922, AI804940, AI689151, BF699838, AW873589, AA209320, N62725, AI420094, AI221693, BF130415, AI301467, AA808217, AW511885, BE073003, AW166094, AA019916, AI359094, BE073109, AI753256, AW675323, BF671156, AA258518, AA954483, AA324329, BF668455, F13496, AA281446, BF247796, AA487161, BF029971, AA730575, AA121642, AI123192, R49582, AI887042, AA487312, AA364288, AA385769, AW440846, R60975, AW451535, AA972339, AI091153, T74984, R36295, AW118180, R75731, BE003024, AI459209, BG055090, AW895451, H80344, AI984894, AA581815, BF877111, AW805837, BE000523, D57701, T03076, AI67454, F10499, Z40296, R43580, AA081798, R49916, BE928534, Z43703, AA493265, AA526871, AU118452, AI144481, BE540542, AL442081.1, AL354793.11, AK001029.1, AF189009.1, AB015344.1, AF293385. 1.</p>
HACBS22	14	847113	1 - 3225	15 - 3239	<p>AUI24073, BG253611, AW965191, BG115564, BF032820, AW965203, BF306517, BF304908, BF306593, BF982389, BF033269, AW890326, BF983369, AI302793, BF591498, AI567467, AV711792, AA429582, AI422294, AI859789, AA433987, AA814217, AA252998, AA279301, AA411385, AI342153, BE328862, BF127455, BF223404, BE073310, AW131093, AI061457, AW886431, BF316718, AI418930, AI126382, BF334564, BF115589, BF229901, AI199632, AI083697, AI076499, AI565545, AI083759, AW168955, AI075711, AA451848, AI832008, AA278862, AA406270, AA039587, AA603155, AI654833, AI217940, T67815, AA004762, BG056988, AW166397, W48835, AA857111, AA099992, AI283878, AA156539, AI268898, AA311784, AA625982, AW081237, AI431333, AW337580, AA157697, AI142910, AA434158, AW953535, AA281247, AI886152, AA099991, AI222819, AA279346, AA464193, AW902181, H41843, AA292181, T41156, T41125, AA918848, AV725329, AW237010, R20286, AA864669, H53657, BG008052, R22827, AA366602, AA456430, AA323466, AA897397, AA399222, BG002413, AA278539, R15382, BF899835, BE746477, R73996, AW663090, F03040, BG005938, R23319, BG002290, F06777, AA431990, AA884057, AI696614, BG002306, AA743065, AW805802, T40225, AA004763, H41803, T26456, R49943, H78738, AA598528, H78725, BE242201, AW769702, H79499, AW804514, H79512, AW589498, R08207, AA446922, BG008055, R42123, AI040559, H53618, BE938610, R23242, BF943906, T41091, W49816, BG007599, BF746451, T40268, BF943900, BE242322, T26457, BG007600, AA779288, AA620918, AA345630, T67965, BF943907, BF230057, T40261, AL120752, R43626, AA159388, H69584, AA252997, BE247168, R73903, R46015, AW189448, BE241991, AI868154, AI953925, AI421607, BF869086, BE939781, AA894421, AA039586, AA324932, AI498022, AW965271, AW300921, AW965468, BF871875, W68610, BE242008, BF829222, AA333777, R08258, AA400456, BE769384, AA332944, BE267667, AI147721, R49942, BG121728, W42651, BF243188, BG170063, AA815037, BE257390, BE790941, BF808078, AW977805, AW291305, T81704, AB011083.1, AF033861.1, AK027857.1, AK027859.1, AF087963.1, BC002870. 1.</p>
HACBT91	15	789939	1 - 827	15 - 841	<p>AW957974, AW003857, AI820045, AI523911, AW084836, AI983096, AI333432, AW188197, BF338099, N41047, AI433769, AI379333, AW438811, AA927750, BE139611, AI435307, BF436802,</p>

					<p>AW613586, R71675, AA678318, AA748856, AA301830, AI337423, AW243869, AA577365, AI382805, AI926335, AA568182, R47922, AA057770, R50081, BE247721, AI539624, AI698267, AI224055, BE244865, AI365443, N47137, AA903242, AV707146, AW955723, AV702790, AV701751, AW962407, AV705416, AI535639, AV705047, AW954994, AV703012, AW957544, BF380516, AV729076, AV707458, AV706060, AV704785, AV701728, AV709232, AW957628, AW954206, AV709235, AV707753, AV686390, AW955616, AW961393, AV725497, AV729376, AV728436, AV697196, AW958846, AW963660, AW951562, AW949999, AI535660, AV728733, AV692600, AV727314, AV703766, AV705319, AW959907, AW950888, AV656903, AW956199, AW957853, AV704180, AV696106, AV706223, AW963378, AW964540, AV727238, AV705869, AV705811, AW953969, AV689111, AW961593, AV695545, AV702266, AW952064, AV704955, AW963868, AV705135, AI525856, AW949731, AW958280, AV686420, AV686100, AV726103, AV695752, AV693523, AV709551, AV702861, AW951707, AV694674, AV709101, AV698429, AV702372, AV697498, AW950597, AW952223, AV692691, AV706229, AW958916, AV701067, AV658334, AV728670, AV705562, AW949729, AW955152, AV684962, AV729378, AW949523, AW957102, AV705134, AV685966, AW955662, AI536138, AW956637, AV653325, AV705693, AV702498, AW950199, AV708203, AW964369, AV701643, AW950172, AV707002, AV725153, AV706136, AI557602, AW955904, AV727916, AW950411, AV707024, AW949529, AV706147, AW963601, AW953788, AV647006, AV702035, AV705520, AW954782, AW951743, AW957682, AV702172, AW966604, AV705453, AW952368, AW956762, AW962384, AV654287, AV708025, AV728309, AW950079, AV708980, AW965813, AW958901, AW959980, AW955841, AV705959, AV725697, AW950395, AV706910, AW959982, AW950443, AW950248, AV708850, AV707329, AV703635, AW954237, AV704798, AV703030, AV703542, AW959543, AW963011, AW963750, AW950671, AW955713, AV725948, AW949451, AW966756, AV729132, AV701881, AW949927, AV653809, AW955609, AV649672, AW950446, AW949351, AV702673, AW957110, AW954372, AV728874, AV685955, AW949530, AW959828, AW964111, AW960601, AV705185, AW966444, AW950012, AW962444, AV725001, AV703494, AW959806, AV705981, AW952403, AW957987, AW966603, AV726789, AV661704, AV706893, AW964673, AV727978, AV706459, AW953797, AV707414, AK025994.1, U94592.1, Y08991.1, Z30183.1, AF217994.1, U45328. 1.</p>
HADDE71	16	839187	1 - 653	15 - 667	<p>BE646364, BE562975, BE734905, AA227916, BE275558, BE387443, AI568587, BE387535, AW245842, BE857544, AI805978, BE386863, AA530975, AA845548, BF437434, AW627607, BE741623, BE898827, AA393921, AI201926, AI391625, AI199262, AI675180, AI123847, AA463396, AI128152, AI197839, BE791237, BE384118, AA913172, AA505110, AW408817, AI187762, AI076304, BE899199, R52594, AW009600, AA465034, AA913634, AA488109, AA885156, AA452881, AA464960, AA884143, BF340639, AI886462, AI188491, BF446332, BF221728, AA227574, R84997, BE243531, BE903843, AA424231, BF331414, AI675231, BE249813, D45528, R40380, W60397, BE670322, F37062, R53393, AI473277, R84954, BE265829, AW407603, W60306, AA322573, AI928674, AI368380, AL535519, AI312011, AI886883, AI471250, BF032040, AA336279, AI357522, F31267,</p>



					AL512746.1, BC002733.1, AL136844.1, AL136768.1, AL122121.1, U91329.1, AL050138.1, AC007390.3, AF146568.1, AK026542.1, AK025772.1, AK026533.1, AP001873.3, AL512719.1, AL117394.1, AK027096.1, AL512718.1, AF091084.1, AC026787.4, AK000614.1, AC004690.1, AB055368.1, BC006195.1, AL359618.1, AF207829.1, AK000445.1, AB062938.1, AL110225.1, AK000137.1, AK025092.1, AB060825.1, AF125948.1, AC022215.4, AK026452.1, AK000083.1, AL137550.1, AL512754.1, AF271350.1, AL359941.1, AB047904.1, X82434.1, AB060826.1, AK026353.1, AC002467.1, AB048954.1, BC001045.1, BC000455.1, AK000652.1, AB048974.1, AL117585.1, AL512454.6, AC000111.1, AL353802.14, AK026592.1, AL513015.6, AL359615.1, AL499604.9, AC006371.2, AB051158.1, AB055366.1, AC006336.4, AL133560.1, AL512689.1, AC004686.1, AK026647.1, AK026927.1, AK026583.1, AL117583.1, AK024538.1, AK026480.1, AF348209.1, AF177336.1, AL353940.1, AP001699.1, AF334404.1, AF061943.1, AC026464.6, AB055315.1, AB052191.1, AB060852.1, AK025491.1, AL049382.1, AL022147.3, AC005886.2, AK026528.1, AL049300.1, AK027113.1, AL049464.1, AK026504.1, AK026959.1, AL117435.1, AL136928.1, AL050024.1, AL161628.9, AL445236.22, AK026534.1, S61953.1, AL136845.1, AK026086.1, AF225424.1, AK026532. 1.
HADDJ13	17	827273	1 - 2304	15 - 2318	AW575129, AW022897, AA010299, AU144131, AA669573, F11929, AL138228, AA634252, T66105, AA219059, R91924, R51726, AA856981, AA782322, AC079383.17, AC004552.1, Z95118.1, AF224669.1, AC018797.4, AC003035.1, AL161436.12, AC008625.5, AC002565.1, AC002350.1, AL390738.4, AC073593.13, AL354932.26, AC004491.1, AC011497.6, AC051619.7, AC008440.8, AF205588.1, AC007546.5, AC005250.1, AC016594.6, AC006038.2, AL031120.1, AC020658.6, Z84469.1, AC018719.4, AC006080.1, AF324890.1, AL354873.19, AL391259.15, AL162615.13, AL034372.33, AC018639.8, AL132777.4, AC004605.1, AL352978.6, AL160269.14, AL136000.4, AC024168.4, AL080275.20, AC090942.1, AC004685.1, AC008901.5, Z82198.2, AL121578.1, AC013734.4, AL133286.9, AC002091.1, AL356575.8, AC007934.7, AC005035.1, AL031311.1, AC005840.2, AL117337.25, AL035400.13, AC068724.7, AC007225.2, AL499604.9, AC005208.1, AL139785.5, AC002368.1, AC011484.4, AL162233.14, AC018637.3, AC091493.1, AL035555.10, AL136231.12, AP001714.1, AC044797.5, AC006211.1, AC009779.18, AL160155.19, AP000512.1, AC079754.4, AL391987.15, AP001732.1, AC083861.2, AC024060.5, AC025262.27, AL158069.16, AB023051.1, AC087311.22, AC078833.3, AC005670.1, AL391136.9, AL163267.2, AL080315.18, AC022201.4, AL138721.16, AC007318.4, AC005529.7, AL121594.6, AL136300.22, AL391114.12, AC006285.11, AL079342.17, AL031293.1, U82671.3, AC011310.3, U52111.2, AC018812.5, AL136365.9, AC078846.2, AL356379.10, AC007358.2, AL162231.20, AC000085.5, AC072061.8, AC010234.5, AC007151.2, AL445669.9, AL079340.7, AL445928.8, AC007363.3, Z94056.1, AC012377.5, AC006195.1, AL139109.14, AC002312.1, AC012368.6, AL022164.1, AC027124.4, AC005884.1, AC016574.6, AC010735.11, AL358815.12, AC008009.4, AL109964.20, AL161793.9, AL139092.12, AC010326.6, AC003950.1, AC002351.1, AC022468.5, AE000658.1, AC009484.3, AL031659.9, AC009247.12, AL138836.15, AL121595.5, AC004674.1, AC007386.3, AL355339.7,



HADMA77	18	783049	1 - 1899	15 - 1913	AC025168.7, AC021188.6, AP001731.1, AL138832.10, AC007228.1, AL355530.6, AJ009612.5, AP001671.1, AC015853.8, AC073607.19, AL137230.3, AL031295.1, AL122125.4, AC018641.3, BE886986, AL118575, BF963505, BE896957, AA019981, AI871227, AW958870, AI148306, AI090074, AA594961, AI620245, N62115, AI499838, BE139496, AA253149, H37934, AW953772, AA398760, BE883579, AW008316, R17479, AI934670, AA253150, AI436173, AI446137, D59581, AI128007, R54297, H42535, D61056, D80139, R61184, AI197892, AA729655, D51488, H55864, H55771, AI075689, AA911710, AA292804, H86756, BF963502, T57670, AI961860, H42534, D51454, D81542, T34704, D80154, D81775, AA001440, T59256, D59479, R42975, R61185, AA994602, D51481, D51437, D59463, D59482, R46039, R51909, AA359928, AA659063, N79566, Z40268, R25021, R42826, D52193, Z42365, AA358058, T57710, AV656695, AL048093, R43779, AW276733, AA365016, AL048094, F01883, AA708838, C14366, N78346, AI601109, W16551, R18081, C00235, BF663261, BC007974. 1.
HADMB15	19	847116	1 - 316	15 - 330	AW136268, BG056888, AI131328, AI174443, AI091646, AW117296, AW168872, AI082447, AI432175, AI290911, AI741489, AI682685, AI142536, BG059892, AW149659, AW071935, AA233541, AI183690, BG056462, AI689641, AA599916, BF196591, BF196843, AA199743, AW136277, N77910, AA564806, AA243035, AA779709, AV722133, AI032138, AA844525, AI467910, AW965361, AA852418, AI982751, AI282445, AI982761, T03902, AI420648, AW167499, H08108, BE328548, AW068986, C15651, D52660, AW665899, AI246702, AI538705, AI271662, AI435112, AI288692, BE466948, AI690048, D55112, AA779042, AL536118, D53747, D54101, AA486941, D53384, W07076, AA232504, AA486765, BF832290, AI038647, AW497637, BF947006, AU155428, T05461, AL136582.1, BC001207.1, AB040527.1, AB058762.1, AB040528.1, AB040529. 1.
HAGBQ12	20	722205	1 - 729	15 - 743	AI332690, AI374724, AI285345, AA876359, AA987498, AI702600, AI079453, AI382918, C04098, R63800, AI697895, H87363, R67068, BE673734, R73892, BF432849, R68633, R68632, R66112, H03322, AA340294, H87907, AP000350.1, AC007363.3, AC003969.1, AC005948.14, AP000360.1, AC004066.1, AC000053.2, AC002060.3, AL450169.1, AL033522. 1.
HAGCC87	21	638587	1 - 1578	15 - 1592	AA587370, AA351604, AA661545, R22639, R22638, R18189, AA650370, AI459585, AI810301, R17880, BF434228, BE811111, BE701381, AA572974, BF857849, T50676, AL120282, AW168846, AI192440, AA714288, AI268019, AI745335, BF681619, BF828236, AU117483, BE147135, AA503298, AW513071, BE675695, AI811846, AI203527, AI079823, AI826761, AA634991, AI355007, AW769654, AI249365, AA704040, AA602951, AA652834, AV762430, W02749, AA836552, AF236698, AA492105, AA747977, AA948670, AI523316, AW337805, AI565126, AI610737, AA405726, AW512528, AI499954, AW013787, AA565232, AI917636, AI869797, AI133083, BG056992, AI887235, AA483075, AI366555, BE906142, AA425924, N33184, AA282951, AA773473, BF868994, AA833896, AA775188, AA251356, AA833875, BF845126, T17332, AW589345, AA736488, AW747980, BE677126, AA713705, AA904211, H91062, BF991881, AW194325, BF447461, BF032064, AL118612, AL034430.4, AL138878.10, AL133332.12, AL117380.28, AL161725.13, AP000143.1, AC004650.1, AL160155.19, AL035086.12, AL512310.3, AL450265.11, AL022393.1, AC004166.12, AC024167.5, AL390918.7, AL135960.1, AJ131016.1, AL035683.9, AF196969.1, AP001695.1, AL049795.20, AC079174.20,

					<p>AP000090.1, AC002542.1, AC087777.2, AP000893.5, AL365364.19, AL118525.17, AC003962.1, AC004540.1, AL022238.1, AC003665.1, AC005042.1, AC007597.3, D87675.1, AC004662.1, AP001972.4, AP003438.2, AL365223.19, AC010223.5, AC000379.1, AL161670.4, AP001694.1, AC004820.2, AL035594.7, AC004776.1, AC008537.5, AL138759.20, AC002312.1, AL360270.18, AC083884.6, AL031663.2, AC006213.1, AL139322.13, AL356017.3, AC008906.5, AL031726.22, AL355385.15, AC012170.6, AL158147.17, AL138761.12, AL360089.13, AC000085.5, AC079141.7, AL109938.8, AP002847.2, AL512430.14, Z86064.1, AC006511.5, AC055745.23, AL138784.30, AC004987.2, AF168787.1, AC023600.19, AP001718.1, AP000171.1, AP000056.1, AL512658.12, AL031774.1, L78833.1, Z82190.1, AC034186.4, AL031319.5, AP000124.1, AL121902.13, AC012368.6, AL133418.4, AL121997.7, AC005856.1, AL137800.12, AC078961.23, AP001706.1, AL163210.2, AC009996.7, AC026164.5, AL050349.27, AC006251.3, AC020604.9, AC011003.7, AC023510.16, AC005913.2, AJ400879.1, AC007367.3, AL360230.20, AP000330.1, AL132986.4, AL590611.7, AL445489.10, AC026203.3, AL031427.15, AL033378.12, AL031577.1, AC090514.1, AC024093.46, AC026202.6, AC009220.10, AC006455.2, AC005047.3, AL031584.1, AC008685.7, AC006039.2, AC009499.4, AC005091.1, AC005924.2, AL358354.16, AL031123.14, AC002044.1, AC018821.4, AL139274.17, AC013468.12, Y10196.1, AC067941.7, AC010340.7, AC068102.4, AC003108.1, AC006023.2, AC084865.2, AC018686.7, AC006928.15, AC007130.2, AL117330.6, AL031594.9, AL392044.7, AC068724.7, AL450344.4, AL118520.26, AL121929.17, AC073927.9, AC005358.1, AL034346.31, AL445590.4, AP001728.1, AF205588.1, AC022116.5, AP000851.4, AL034372.33, AC005098.2, AP001432.1, AC025540.7, AL357912.10, AC005065.1, Z95116.1, AL139021.6, AL590037.7, AP000462.2, AC007955.4, AP000151.1, AL139125.18, AB017654.1, AL159140.4, AC005343.1, AC090950.1, AC018641.3, AL117337.25, AL034421.7, AL160471.5, AL080243.21, AC022469.5, AL590073.6, AC023114.5, AL031295.1, Z86061.1, AC007458.13, AL163195.5, AL049832.3, AC012519.9, AL022069.1, AL162551.3, AC004477.1, AL445217.3, AP002015.3, AL138958.18, AC005099.1, AL138876.23, AC006460.3, AC004477.1, AL445217.3, AP002015.3, AL138958.18, AC004802.1, AC007254.3, AC016579.5, AL391262.3, AC018752.4, AL022329.9, AL133453.3, AP001646.4, AC007270.2, AP000469.2, AL359645.15, AC011246.6, AC003043.1, AC005971.5, AC009032.7, AL353752.6, AC004911.1, AC034207.4, AL356057.12, AC009482.4, AC083868.2, AC007256.5, AC069262.24, AL353741.16, Z98200.8, AP001708.1, AL391839.9, AL118556.4, AL137072.8, AC015971.4, AC010553.6, AC012634.7, AP001717.1, AP000567.2, N55064.</p>
HAGDW20	22	637489	1 - 1270	15 - 1284	<p>AL671549, AA603387, AA614197, AC005629.2, AC006453.3, AC020898.5, AP001610.1, AC025435.5, AU117844, AU118506, AU119632, AU142701, AU118316, AU119959, AU119025, BE875471, AU126076, AU137238, BG104575, AU138967, AU119281, BE880144, BE620212, BF527450, AL046250, BG029297, AU117066, AU126818, BG113544, AU128669, AW604129, BG179797, BF346364, BE694058, BE079543, AI872395, AW292851, AW170564, BE079454, AW812853, AV714888, AL042857, BG028602, BG005799, BE614073, AA523866, AW390450, BE856764, AW393917, BE676397, BF375747, AW373523, BG168417, BE874209, BG110102, AW393931,</p>
HAGEG10	23	823543	1 - 5670	15 - 5684	

HAGEQ79	24	828055	1 - 771	15 - 785	<p>AW393924, BF340623, BE348284, AL048803, AW440289, BE896149, AW603939, AW590802, W72259, AA131497, N37081, BF880848, AA074901, AI126725, BF197419, AV720399, BE185077, AW753218, AU145052, AW935198, W58475, BE185075, BE185029, BF132321, AL048441, BE464666, AW968607, BE544112, AI872418, AU143989, AA188783, BF984545, AW166006, AU150921, AU153212, BG059577, BF001763, AI923075, AI188147, AI687738, AA429541, W58350, BF576448, AI191432, BF434307, AA687272, AW967782, D82378, AA486891, AA074726, AW770549, AI352455, BE677700, AU146166, T62894, AA019898, AI682014, AI141110, AI984576, BE091476, AU159948, AA167708, AI803035, BE220983, AI954034, AW473381, AW170305, AI888001, AV750571, AA514490, AI149197, AW022225, W95447, BF222723, AI160170, AW390442, W88638, AI159801, AA019911, W94007, AA918797, AI149526, N20405, AW022401, BF593100, AI872122, AA129509, AI123869, AI829442, AW340679, BE932213, AW665371, BF353920, AI470206, AA471281, AA831456, BF448445, AA923369, AL046249, AI015859, AW444790, AI811146, BE165922, AW272390, AI825915, AA847170, AI393175, AA621242, AI190196, AU144907, AA053669, AA262264, AA663506, AI206842, AW073367, BG236039, BF743168, AI221801, AA548471, AA767426, N31919, AA013224, BE146085, W79591, AW361597, AW361657, W30927, AI090566, AW393576, AW993026, AW390443, BE614509, AW170516, AW069441, BE966031, AW293184, AL121271, AA612903, AA991198, AA525491, AA95766, AA428587, AI619772, BF844737, AA046189, AW103132, BF111589, D82485, AA811517, AA262875, AI989394, AA252802, AA760763, AA486695, AA768156, AA188773, AA664378, AA834574, BG117833, W79810, AI131383, N36423, W76476, H62712, T65953, BF699718, AA149019, AI204502, AW602174, AA205998, W42709, AI880545, AI862197, AU145459, AA826167, AW992337, AA166945, L44407, T65958, W69500, AA022549, AA308301, AA487122, AW362039, AA771935, AA811100, BF851506, AA476695, AI887553, AA136559, AW339567, W02787, D82500, AA486801, W69501, W92367, AW264084, BF361101, BF001501, AA865320, AI347497, AI274491, D50525.1, AK000749.1, AK000625.1, AK025129.1, AC004542.1, AF088006.1, AC008897.7, AF245044.1, AC010319.7, BC008918.1, T62744, T64529, T64535, T92713, T92790, R00209, R05403, R05404, R06985, R06986, R18149, R41696, R41696, R63842, R64456, R66071, R67671, H04551, H53471, H53846, H62797, H86336, H86337, N42704, N44298, N46397, N48830, W42902, W88556, W93952, W92368, W95398, AA013319, AA022548, AA046083, AA053771, AA070849, AA079889, AA079890, AA131379, AA166764, AA243403, AA251232, AA252615.</p> <p>AI741487, AA779582, BE674646, AW303577, AI305251, BE219521, AI688718, AI936253, AI093754, AW341275, BE222507, AI692909, BF966664, AI493111, BF525487, AW016639, W92767, AU150022, AW341787, AI278427, BF966817, AA044775, AA910036, AI685015, AI285959, AA719683, BE645673, AW196910, AI432636, AI096735, BE618873, BE541159, H91757, AI702190, BG152855, AI244929, AI681847, BE217959, AI498036, BE467879, BE696146, AI810609, R55798, AA897359, BE464034, AA975324, F09971, W73069, AW594097, AA703815, BF224038, F10760, T72606, AA932659, H46138, AA351671, T31206, AA317283, AI867144, AI681277, AV718692, BE938093, AV718489, T31188,</p>
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HAGFS57	25	847120	1 - 860	15 - 874	<p>BF893958, AL079477, BE221875, AL532698, AI299412, R51649, AL040440, AA339493, F12505, F05649, Z43527, F06606, R12847, BF690787, R25251, T74335, AW382934, AB020663. 1.</p>
HAGHN57	26	773286	1 - 2426	15 - 2440	<p>AL533248, AU118622, AU119331, AU133909, AU119469, AU118182, BE794468, BE791529, BG176702, BE280450, BE729801, BF663566, BF970116, BE257176, BG032912, AL516224, BG121097, BE784191, BG249033, BE727671, BE881192, BE745390, BF792305, BF037862, AV710149, BE617085, AV751361, AW291174, BG163346, AI686123, BG033409, AV762315, AV704873, BE540243, BF344980, AV707943, BF671351, BE394881, AW070780, BE538770, BF303671, BE541947, AW963773, BF303913, AW299817, BE378370, AW299807, BF107096, AW515893, AI338838, BE254836, AW402330, AA455894, AI436127, AL516223, BF001973, AI392820, W31025, W28207, BE535313, BE258523, BF109189, AA182513, BE617702, AW275883, AW674662, BG169977, BE711218, AA134574, AW304388, AA588768, BE868534, AU144819, AA455892, BF802948, BF222585, AW902162, H16095, AI034153, AU145137, AI905391, AI985354, BG011776, AW612879, BE711276, AV659416, AU150558, BE702340, BF055535, BE711244, AA652292, AW271981, AA780056, AI624858, AA319693, AA604113, AV744893, AW771218, AV742941, AA837954, T60588,</p>

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HAGHR18	27	655435	1 - 1128	15 - 1142	AA678513.
HAHEA15	28	847013	1 - 1332	15 - 1346	BF683891, AW977366, AI743651, AW295805, AU144609, AI469869, AI188995, AA236904, AU117919, AI080089, N92489, BG116971, AW956038, W17171, AA872336, H96165, AA236057, BE538565, H96164, AI824681, AA736871, BF089224, R23025, BE934268, AA370017, AW891311, AI356478, AA693355, AI924051, AA766932, AA669094, AI568061, AI348901, AW020619, AI036368, AI436438, AW021717, AL049053, AV681572, BF344734, BC001242.1, AK000965.1, AK026843.1, AB055328.1, AK027210.1, BC006457.1, AB052176.1, AL136615.1, AL137258.1, AK024855.1, AF126372.1, AB063060.1, AL122104.1, BC004951.1, AL050172.1, BC001964.1, AL136784.1, AB048975.1, AL136792.1, BC003684.1, AL133029.1, AF267856.1, AK027181.1.
HAJAA47	29	534670	1 - 1223	15 - 1237	BF991208, BF743765, AW021917, T74524, T57767, AI491765, N22058, AA904275, AA228349, AI689019, AA054085, AU131834, BE256101, AW270771, AL119691, AI284543, AU118852, BE062478, AI859946, BF769528, AW873261, AW152178, AC009318.11, AL161656.20, AC011811.42, AC018462.4, AL023799.5, AC012170.6, AL137796.6, AP000704.2, AL499628.1, AC007934.7, AC005082.3, AC006111.3, AP001711.1, U91323.1, AC002407.1, AL031680.20, AL356244.12, AL391280.15, AC008526.5, AE006639.1, AC009131.6, AL132987.4, AP000103.1, AL158207.15, AL049540.11, AC013434.8, AP000269.1, AC008755.6, AC008592.4, AL355336.15, AK024933.1, AC090518.2, AE006640.1, AP000212.1, AL133211.9, AC008924.5, AL035422.12, AP000280.2, AC011471.6, AC018719.4, AC005200.1, AC005000.2, AC017079.5, AC004858.2, AL133163.2, AC011472.7, AC009488.5, AF045555.1, AC009756.9, AC007546.5, Z98044.13, AP000107.1, AC008267.6, AC005520.2, Z98050.1, AL121933.15, AC002994.2, AC009137.6, AL133174.15, U47924.1, AP000031.1, AP000354.1, AC011224.8, AL162430.15, AC008450.5, AL021154.1, AC011449.6, AP000039.1, AC000025.2, AC004526.1, AP000355.1, AL356057.12, AL137798.8, AC012085.4, AC004383.1, AC004998.2, AL049713.20, AC005077.5, AC011485.6, AC004253.1, AL449209.2, AP000065.1, AP000134.1, AC008521.5, AP000446.5, AC004477.1, AC022173.7, AL356915.19, AL031432.1, AC026172.3, AP001727.1, AL139415.10, AC012351.3, AC011442.5, AC009412.6, AC005920.1, AL157858.5, AC010271.6, AC010636.6, AL513550.9, AL009183.10, AC020983.7, AL109811.39, AL109797.18, AL022237.1, AC069262.24, AC024078.4, AC004232.1,

					AC007371.16, AL157882.5, AC011470.5, AC008753.8, AL590762.1, AC005484.2, AF109907.1, AC009155.3, AC004882.2, AL109827.8, AC011452.6, AL121891.22, AL109804.41, AC011465.4, U63721.1, AL357515.26, AL512347.14, AC008738.6, Z81364.1, AC025280.4, AL138878.10, AL050308.9, AL117380.28, AP000471.2, AC002487.1, AL161659.17, AC008764.7, AC005480.3, AC005841.3, AC003070.1, AL022163.1, AJ224877.1, Z93017.6, AC005220.1, AC004821.3, AC005755.1, AC005944.1, AC010319.7, AF157623.1, AJ012824.1, AL353701.15, AL135783.6, AL359236.4, AL122020.5, AL133264.10, AC007366.4, AP001714.1, AL352979.4, U62293.1, AC003959.1, AL359092.14, AC008403.6, AC004968.1, AC011475.6, AC008747.5, AC005409.1, AC027644.9, AC020916.7, AL139353.3, AP001752.1, AL160397.17, AL022312.7, AC005231.2, AC020904.6, AC018663.3, AC010170.3, AL356378.17, AL137073.13, AC005288.1, AL049872.3, AL133405.17, AC008249.14, AC002389.1, AC002492.1, AL139405.11, AL136126.34, AL009179.1, AC073517.5, AC007057.3, AC013356.8, AL137852.15, AL138707.10, AL049775.2, AL135744.4, AC011816.17, AL135752.6, AC007345.5, AC073073.2, AL034402.9, AL160175.5, AJ277546.2, AC020552.4, AC011742.3, AL353777.18, AC008805.7, AL139317.5, AC002301.1, AC010458.5, AC009965.9, AP001719.1, Z98200.8, AC007163.3, AP000167.1, AP000052.1, AC072052.6, Y15994.1, AC002430.1, AL021940.1, Z98752. 16.
HAJAY92	30	845601	1 - 2331	15 - 2345	AI208943.
HAOAG15	31	852204	1 - 5129	15 - 5143	BE349027, AA460958, AA460959, AI291926, AA461266, N58870, N72734, AI277327, AA461265, H43656, BF927468, H44722, BE835623, BE85624, Z33537, AI903814, BF366858, AW968357, AA465480, AA485068, AA430219, AF112345.1, AF074015.1, AF172723. 1.
HAQAI92	32	688037	1 - 593	15 - 607	AL522436, AL524148, AA513002, AI735602, AA772397, AW014080, AI799589, AI818675, BE617237, AA478326, AI217776, AW409592, BE646171, AI005409, AA552147, AW177019, H42123, R00846, H42122, BE795741, AA362478, AI491808, AI769438, AI560335, BE613582, AI336126, AI371050, R01499, AI610208, BF089287, BF095098, AW613379, AI275309, BF752321, BC004222.1, AL118502. 38.
HAQBG57	33	837545	1 - 1034	15 - 1048	BE562515, AI742455, AI961996, AA507216, AI190639, AA731364, AI673081, AA593594, AI003558, BF528073, BF885284, AI435334, AW438908, AI381200, R69327, AI204170, AI739035, AI401755, AI591140, AA432147, AA251459, AW967618, AA446655, AI682154, AW613695, AI500259, AA398391, R79970, AI149747, H97579, AI263813, AA401707, BE350370, R69328, AA670245, AA643922, AA852081, BF345349, AA889222, BE782687, BF034010, BF038771, BC008671. 1.
HAQCE11	34	633730	1 - 582	15 - 596	N45328, H29603, F10900, AW949645, D80045, AW965158, AW949642, AV738340, AV742732, AV724520, AW949643, AV741220, AW964468, AW966389, AV718489, AW966330, AV699550, D58283, AV718692, AW975618, AV742048, AW978634, D81030, AV718844, AW959570, AV720203, D80043, D59619, D80195, D80210, D80240, D51423, D51799, D80391, D80253, AV719822, D80227, AV719324, AV719783, AV718800, AW966531, D80188, AV720211, AV720464, AV718770, AV720731, D80219, AV699447, AV722801, D80196, AV723927, AV699927, C14429, D59927, D80038, D80212, D80193, D80022, AV719468, AW949632, F13647, AW949641, D80366, D59889, AV700889,

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HATBI94	35	839468	1 - 1366	15 - 1380	AW966285, AV720255, AW293337, AV725342, AA297446, AA729088, AA296991, AA334584.
HATCB45	36	631172	1 - 889	15 - 903	<p>AV703043, W80623, AW137678, AW070465, AI922560, BF432932, BE348452, BF941632, BF475288, BE675766, AW003656, BF110027, AI768642, AW470985, AA708150, BE048489, AI689677, AI373102, BE540247, BF063606, AI635762, BE501611, AI587410, AI767805, BE929680, R44963, W78741, AI266349, AI187875, AL533462, AI762852, R19308, R27786, R27875, C01853, AA492441, D63024, AI796430, AA167435, BE669639, BE464050, AA167436, BF110272, BG150184, AC009307.4, AC006501. 5.</p>
HATCI03	37	580805	1 - 920	15 - 934	<p>BF802634, AA744060, AW270385, BF804385, AI696854, AW963489, AA700943, AA583394, AI537407, AI453210, AW571963, AW976024, BF530611, AW468372, AA747757, AA225406, AW958962, BE169870, AW855803, AI554471, BF914416, AA687730, AA559219, AA586667, AW272294, AL137119.26, AJ007690.1, AC002369.1, AC002300.1, AC010494.4, AL445237.16, AC009137.6, Z95114.19, AL135927.14, AC007227.3, AC009050.1, AC005837.1, AC011242.8,</p>

					AC004867.5, AL161731.20, AC009120.8, AC004821.3, AC011450.4, AL390196.17, AL445248.7, AC005015.2, AC008622.5, AC074121.16, AC004166.12, AL035587.5, AL049872.3, AC025594.5, AC074013.5, AP001760.1, AC005080.2, AP001711.1, AP002028.1, U07562.1, AL139330.17, AC020908.6, AL138724.12, AC007011.1, AL354696.11, AL450224.1, AL137802.7, Z97876.1, AL163279.2, AC005098.2, AC004859.2, AC004815.2, AL442167.1, AC005000.2, AC011455.6, AL132768.15, AC007991.7, AL355343.18, AC026464.6, AL049538.9, AC017101.10, AC009276.9, AC026432.3, AF168787.1, AC005899.1, AP000208.1, AP000130.1, AC009244.24, AL132639.4, AC002395.1, AL138787.11, AF207550.1, AL139353.3, AL132780.5, AL049795.20, AC005067.2, AC035323.5, AC005215.1, AC018758.2, AC069548.4, AC005378.2, Z98941.1, AC020552.4, AC083868.2, AC002426.1, AP003465.2, AC012379.7, AC007057.3, AC006435.7, AC067941.7, AL450226.1, AC074331.1, AL513366.11, AC007685.2, AL359680.4, Z82190.1, AC005972.1, AF134726.1, AC083874.2, AC007488.15, AC003101.1, AC004832.3, AC004755.2, Z69710.1, AC084865.2, AE006466.1, AC007383.4, AK023134.1, AC006088.1, AC005919.1, AP000424.3, AC006538.1, AC0073834.6, AC011495.6, AL353748.13, AJ251973.1, AC007842.1, AL161937.13, AL163285.2, AC004098.1, AP000096.1, AL359092.14, AL122004.17, AC024239.7, AC068999.15, AJ009616.3, AL136170.12, AL049830.3, U73643.1, AC004836.2, AL356057.12, J00083.1, AF064861.1, AL121891.22, AC011737.10, Z82215.1, U91323.1, AC004531.1, AC067968.1, AL356805.5, Z85986.1, Z85987.13, AC007263.4, AC005412.6, AL121583.25, AP000240.1, AC011811.42, AC006388.3, Z82901.1, AL391241.21, AC002316.1, U80017.1, AL450344.4, AF051976.2, AC012476.8, AC006251.3, AF228703.1, AL049646.19, AC005746.1, AC005933.1, AP003357.2, AC008403.6, AC005102.1, AC002470.17, AP001718.1, AL137012.6, AC005516.1, AL135918.6, AC008155.9, AL109976.23, AC005529.7, AL163032.3, Z95152.1, AC008521.5, AC011479.6, AC006333.3, AC006285.11, AC006050.1, AC012507.9, AL158823.11, AC005775.1, AL133295.16, AL121655.1, AL117336.22, AL138702.8, AL109984.14, AL023583.25, AC007845.12, AL118525.17, AF243527.1, AC005874.3, AF134471.1, AC044797.5, AC007318.4, AL355802.13, AL132712.4, AP000503.1, AC008266.3, AL033528.19, U47924.1, AC010489.4, AP001609.1, AC005702.1, AC008745.6, AP000553.1, AC005231.2, AC000360.35, AC005736.1, AC020942.5, AC026416.4, AF318296.1, AC007066.4, AC004874.1, AC004158.1, AP000873.4, AL137128.4, Z97352.1, AC016257.22, AC006011.2, AC026672.44, AL139044.15, Z93015.9, AP000065.1, AC016816.4, AC008474.7, Z94056.1, AC027319.5, AC010267. 6.
HATEH20	38	836056	1 - 836	15 - 850	AW978851, AI686323, AI767653, AV747166, AA829515, BF512171, AA034240, AA053933, AA737691, AA533167, AW261869, AA835698, AA447216, AI623248, W92607, AA835700, Z21891, AA599963, AW893940, W95232, T20153, T20152, R57454, AC006207.5, AB020865. 1.
HBAGD86	39	838799	1 - 1699	15 - 1713	AI658681, BE466145, AI806836, AI653272, AA004211, BE302094, BF970406, BE018485, AA418617, AA594901, AI580148, BF589715, AI804211, AI669907, AI342168, AI810310, AA506350, AW022528, HI0330, AA721162, AA452114, W03931, AW953290, AI262137, R61309, AA680147, N62384, HI0331, AI264925, AA765972, BF086698, AW275301, AA485210, CI5277, N79353, AA350799, AI867727,



					AI474438, AI129224, AA093047, D60782, AI535847, AA897480, AA350798, AV714899, AW956763, AV728867.
HBCJL35	40	1300785	1 - 706	15 - 720	AW167360, AI678459, AI817750, AI559589, AA909847, AA101311, AA868436, Z44341, AW661978, BE974135, T71507, D51829, BF109466, AI267409, BE246888, BF803712, BE247681, AA825376, BF795799, AB007930. 1.
HGBGC29	41	691473	1 - 1842	15 - 1856	BF223021, BF036281, AI341667, AA180986, AU153625, AU151704, AI093197, BE855464, BE018834, BE616741, BF684563, AI694268, AA031711, AI469856, N63041, N50125, AI150599, AI597740, AI985206, AI671591, W72535, BF431270, AI741942, AA037642, AA180865, AA031648, AA436065, AI800796, AA129939, BF056140, AW002265, AU157670, AI074205, AA830493, BF063800, AI056532, AI656721, W00519, AI275143, AI337739, AW172525, AA443349, AA043021, AA446926, AI655558, AI769027, AA101851, AA917703, W93307, AA526333, AI689128, AA777090, AW002829, BE295568, AW139517, AI128702, AI276137, AW801873, AA873711, AW892754, N98234, W76109, AI631104, AA856832, W92810, AA042939, H87505, AA129938, AI688779, AA693329, AI676108, T87624, AA570072, AA037641, AI186390, AW515672, AA031685, AA037500, R82703, AA037234, AW380430, AA985191, AU131994, BE302396, H87506, AA938640, AI926907, AU118291, AI696069, T74071, AA102060, AW057528, AI671894, AI962374, AI695458, AA046964, BE869607, BF814627, F12449, AA725452, AI968837, AA917824, AA054749, BF437316, F10070, AA917678, BE218382, BE669660, AI916503, AW612381, AA683581, AI984598, AA937814, AI932475, AA046963, AA053281, AI801723, BE858841, AI499751, AA031686, AI074981, AI341558, AI478279, BF735972, AK001006. 1, BC004523.1, AF020920.1, AF038662.1, AB024436.1, AF022367. 1.
HBGNC72	42	892131	1 - 788	15 - 802	AL526130, AL524570, AW003889, AI935768, AW440485, AI936267, AA713525, AW272919, AI796977, AI951842, AW014081, AI760160, BF941209, AI263194, BF475772, AA496533, AW514179, AA724851, AA496454, AI799782, BF589971, AA496526, BE646016, BE563432, H41355, AW264331, AA515579, AI582716, AI581108, AI208124, AA927044, AI695535, AI638313, BG170255, AI147521, AA199585, AW264237, AW248758, AB033019. 1.
HBHAA81	43	846465	1 - 1633	15 - 1647	AL138080, AL138081, BG056111, AW117532, AI855223, BF724275, AW051808, AI332809, AI564820, N63569, AW207494, AI866785, AW148811, AI954565, AI199326, AI199105, N38888, AI243422, H09138, AI986175, AW381536, Z25110, AI991904, Z18300, F31192, Z28916, AW381528, Z41646, AI954371, N38887, AI033629, Z28784, AW381480, N94825, F25740, F00372, AW380848, F16581, AW381481, AA197180, AW104762, BF887537, AB042554.1, AB032999.1, AC006059. 3.
HBIAC29	44	831751	1 - 1768	15 - 1782	BE792362, AU119261, AU117435, AU135719, AL522995, AL523062, AV725708, BG257393, AI033807, AL524959, BG258772, BE005784, BF105898, AW157169, AV695633, AI707987, BF965323, BF794704, BG112387, AA877792, AV697750, AU145651, BE268042, AA001404, AI401215, BE568337, AI812036, AW161740, AA428415, AW182986, AI275437, AW160483, AA678033, AI051135, N40528, AI864046, AI292230, BF670616, AA586803, BE564896, AW294845, AA134820, BF245314, AA768585, BF680744, AI816108, AW163143, BF219379, AW161133, AA506157, AA492248, AI298933, AA594861, AA013286, BE673778, AI421629, AA018334, AA905534, AI684501,

HBICW51	45	553630	1 - 605	15 - 619	<p>AA427401, AA082812, BE768733, AA287601, AW157614, BE768540, D79434, BF946436, AI658777, BF541249, AV696430, AA287752, H98178, BF540910, D79454, D79495, AA018335, AV692094, R11115, H98502, BE768718, D79471, BE768713, AV692366, AV694591, AA808656, BE768500, D62307, R84940, AA037183, AA804276, D79442, AA284650, T93079, N46576, D62351, D62288, AV696341, AW440057, D62360, AW163531, AI057422, D79425, R11059, AA359531, AU156237, W27841, AA013043, AA323139, BF219327, AI991658, D79500, AW613472, BE768582, D61951, T93170, AL524958, BE544935, D62369, AV657638, D62200, AI702248, BF948281, AA134819, D62264, D79447, AV656951, D79470, BE043970, D62243, AA934540, N67412, AW118285, AA483825, D62298, AI911842, AI033466, R31032, X93846, D79508, AI371542, R31522, D79465, AW590942, AW466905, AA180979, AA059251, AI689493, AW661808, AW006273, D63025, AW449881, AI866210, AA059003, N71916, AA381297, AW873906, AW590669, N55843, D79405, AW169134, BE390691, AA585262, AI754249, BE389098, AA059266, AI459286, AI991649, N84299, AI655153, BE548704, AW016856, AI400471, AI400469, BF218780, AY007166.1, AL034379.8, AK021792. 1.</p>
HBAB02	46	837309	1 - 1679	15 - 1693	<p>AW976674, AW977839, BE046511, AI143906, AA837255, AA743668, AW768572, AA699707, AA848026, AA805369, AA765722, AA813921, AW299915, BF229206, AA291129, BF754240, AL158207.15, AB062988. 1.</p> <p>AL529646, AL529645, BE898304, BG112747, BF791411, BG036058, BE392384, BE621757, BE548173, BE895853, BG034671, AA808894, BE901085, BE278873, AW152607, BE795658, AW166898, BG122141, BE782474, BF972826, BE793716, BE140314, AW750993, AA826362, AW517942, BE714673, T59668, BE731030, BF939314, BE732766, BE745104, AI290469, BF477770, AI805651, AI961329, AA581089, BE902575, AW197375, AA974066, AI950259, BF802171, W27729, AV693783, AA877530, AA715365, AI968889, AA885542, AA160748, AA386371, AA335719, BF873961, W73105, BF223151, BE740826, AL120854, BE548914, AA318192, AA501478, BF125073, AI948815, AA581100, AA658457, AI621069, T59802, AA468534, AA503715, BF850755, AW956069, AW841506, AI144504, AA352215, BE897964, BF883404, BF373009, BE090290, BE168997, AW855521, AW820855, BG230749, BF376598, BE622839, AV699089, AV647789, AI567702, AV726156, AW961037, AW411235, AV726058, AW020397, AV706279, AV702427, AV651955, AV702026, BE393551, AV727787, AV660608, AV687176, AW021717, AV698545, AV687909, AV709256, AV708438, AV656903, AV661704, AV696106, AV697196, AW409775, AW951263, AV689111, AV655280, AV728157, AV692345, AV659322, AV654908, AV656478, AV708893, AV709314, AV708381, AV660728, BG168549, AV659536, AV691080, AV706219, AV695545, AV652001, AV705159, AV648263, AV703169, AV728518, AV707541, AW952409, AV709660, AV726624, AV706854, AV729220, AV709604, AV687035, AV696866, AV728997, AV704955, AV726816, AV725920, AV652156, AV701707, AV656283, AV704234, AV708025, AV707933, AV684604, AV729378, AV708980, AV692691, AV701914, AV708723, AV702516, AV693523, AV709407, AV705693, AV708992, AV729263, AV726103, AV708704, AV727029, AV726520, AV728733, AV725826,</p>

						AV702021, AV725134, AV705280, AV645906, AV683415, AW265004, AW964228, BE047925, AV705076, AV707792, AV729259, AA127565, AW022102, AV686064, AV701067, AV704124, BC000131.1, AK000069.1, AC015651.18, AF147378.1, AK027463.1, AF097996.1, AF217986.1, AF217994.1, BC000090.1, BC003658.1, BC008282.1, AL356376.9, S71381.1, AK026494.1, BC006378.1, BC004362.1, AL137283.1, AK000212.1, AY026527.1, Y08991.1, BC007199.1, AF218004.1.
HBJAC65	47	679337	1 - 1671	15 - 1685		1. AI417383, AI686713, AI160452, AI872233, AI498237, AI689407, AI951206, AI689049, AI813616, AI914733, AI126259, AI570910, BG058668, AA770134, AI200474, AA535854, AW001321, AA009972, AI273432, AI752734, AA988072, AI674212, AA430216, AU158825, AI002393, AI302749, AA995633, BE966464, AA977289, W44812, AI932904, N93385, AI752735, AA113797, AI874369, N69363, N92467, AA996269, BE265130, AI474494, BF035188, R88141, R80073, AI219557, AA506148, H44571, H94316, AU155680, AA777180, R70346, AA009971, BG178595, AL121004, H24825, R70355, H47474, R62804, AA913628, R88224, W16593, AI383099, W47417, R48314, H26367, H44572, R46305, W39471, H75788, R70406, AI264507, AA042907, H43874, R70196, R47924, H47382, H22169, H75789, BG112533, H44426, R88147, H27754, R53212, R70195, T86435, R50544, R70345, R53218, AA632870, H28249, R53113, R32547, R62854, H67939, AA360945, T48802, AA114114, H28203, R53120, T48801, H27813, R50641, W47612, H24778, R75693, R69429, D52428, BG058732, R79974, AA042919, AA011039, W25404, R62658, AI972217, AA011106, AA742855, R62609, T86524, BF035213, R48420, AA316324, BE895207, H22218, H67894, AW518725, R48032, AA330127, AL047709, AA374074, AA329547, AA063576, AI672904, AI751274, T27614, R49794, D55055, AW450106, AA371687, AW069622, AI620814, BG151520, BF034863, D55092, AI683440, BF315977, AA369645, BF971926, AI984491, AA903549, AI352377, R49836, AI189413, AA853576, AI087023, AI143136, AW080595, AA401138, AI918382, BE208049, BE550222, AI149988, AA977422, AI928916, AU144386, AA399657, AI367579, AA897393, AA035706, AI002109, AI587237, AU147867, AA553831, AA833926, AW081821, AI139122, AU155092, AA496997, AI610595, AI701956, AI811966, AI254230, AW009778, AA157840, AI283337, AW262857, AI446447, AA852298, AI654262, AI184300, AI128506, AA552369, AA604635, AA583259, AA530888, AA158420, AI696777, AA968781, BF435939, AA558592, AI679597, BF195650, AU147255, AI184403, AU154997, AA723126, AA828222, BE301243, AA156574, AU144430, AA632393, AU158982, AI191123, AI889491, AU159099, AA662257, AI814093, BE315360, AU146056, AU154857, AU155238, AI888961, AU152381, AU147517, AU155476, AU148092, AA771920, AI129393, AU159433, AU147240, AU147366, AU148271, AU147605, AL047763, AU146002, AA554695, AW273189, AU145732, AW070654, AW276349, AI571606, R54732, AI660822, AI678682, AI818491, AI803888, AA599490, AI814696, AW197992, AI628530, AL135927.14, M13452.1, L12401.1, AC007227.3, AK026584.1, X03444.1, AC006441.13, AL080314.29, AL137141.10, AF381029.1, R23628, R74021, R74022, H02237, AA158412.
HBJBM12	48	560606	1 - 1121	15 - 1135		AA722101, R18111, AL590762. 1.
HBJDS79	49	813588	1 - 2311	15 - 2325		BE531135, BE614809, BF982395, BG122680, BE615130, BF968072, AV706034, AI222785, BE539326,

					AI598156, AA131643, AA626884, AI571234, BF036649, BE743394, BE542106, AA770214, AA203111, AI608599, BF035790, BE276209, BG253824, AA436283, AI094146, AI085480, BE223034, AA577314, BE615635, AA436157, AI338243, AW081389, AI224507, BE742762, BE616645, BE879846, AA131533, AA631769, AI348255, AI870284, AI278842, AA971726, AI369248, AA934527, AI274146, AA279453, AA021050, R63988, AW952487, AI869674, BG056655, R78856, BF111769, BG056718, BG056695, BE255966, BE018968, AA551934, AA284976, AA678694, AI202603, AI097586, AW151699, N64789, AW135978, AA471054, AA742282, AI340009, AW873159, AI301870, BE206676, AA730072, AI278735, N22046, N52849, AA324335, BE774969, AA707878, AA312623, AI206104, AA922420, AI081594, AI203119, BE717107, AA770407, AW675278, AI263743, AA291551, AA298598, N76200, H95836, BE770889, AA962696, T15486, N80747, H30520, BE673804, AI520678, AI918182, AA283618, R17600, AI474363, BF806759, AA939087, AI242964, R69061, AA532553, BE770975, BG055182, C03365, T46915, BG029466, R23915, D25896, AA872629, AW860570, AA323822, AW860432, BG011166, AW860428, AA551996, BF898533, BE161547, AW131992, AW862507, AW860442, BF769056, AA551781, BE696376, AW860588, AW860592, AA330149, T34728, R69060, AA419231, AW860586, R49598, AA425955, T74490, H05532, AI718310, AI805179, AW610364, BF840958, R79345, R63904, R23914, AA296953, AW292997, BF338486, BE208400, C02983, AA365446, T71450, C02552, AW607020, AW071145, AW610371, BF825608, BG010487, AW603550, AW371102, BE717176, AI587180, AA578420, AI651804, H95835, AI074093, AW363067, BE903315, AW952592, AV707094, AW952361, AW963627, AW952051, AV661490, AW960297, AV645577, AV701728, AV661494, AV654287, AV705143, AV704833, AW954145, AV704504, AW955632, AW958455, AV706272, AV706289, AV725807, AV726142, AW966044, AW959346, AW949447, AV704144, AW963622, AW952181, AV726831, AW952298, AW951445, AW960663, AW951711, AW945159, AV707503, AW950095, AV645936, AW952167, AW961409, AW958088, AV705115, AV703628, AV704342, AV705002, AV706158, AV706028, AV704330, AV705199, AW952418, AW965813, AW963231, AV709660, AW963026, AV702120, AV706714, AW959755, AW960821, AV700446, AV703833, AV703425, AW961597, AW952031, AV706432, AV729597, AV648461, AW949354, AV725900, AV729388, AV707238, AV706910, AV687519, AV658743, AW953804, D50992, AW951951, AV724996, AW967188, AV709751, AV725369, AV707196, AV706850, BC004501.1, AL096840.25, AL021155.1, Z30183.1, U94592.1, U45328. 1.
HBJEL16	50	847030	1 - 736	15 - 750	AI279501, BE867835, AL528252, AA569392, AW856935, AA071326, AA587712, AA258409, AI341817, BE898008, BE696253, AW576885, AA837880, AW576895, AI584147, AL525748, AW383278, AA071368, BF330803, AW383120, AI393286, AL513864, C00710, AW857093, AA644480, AL528253, AW499908, BF326342, AW749039, BF771813, AA193585, AW383268, BG031591, AL040224, AW383242, BE904616, AW751656, AW383266, AW383144, R15553, AW383205, AW383131, BF931485, AA258753, AW383275, AW383146, AW886371, AW997055, AW996855, BE929916, BE005368, AA188924, BF350669, BF327032, Z99943.1, BC007881.1, AL035308.1, AF087020.1, AL035302.1, AF092425.1, AF095727.1, AF092424.1, AF239756. 1.

HBJFK45	51	531919	1 - 529	15 - 543	AA714560.
HBJKD16	52	853358	1 - 1615	15 - 1629	BG259133, BG258754, BE895955, BE535182, AU119776, BE296370, AW361272, AA205862, BE079707, AI743764, BF669591, BF102652, AA768863, AA767455, AA683506, BF374311, W39021, AA583062, W94893, BE737722, AI128320, AA703242, AA402965, H12229, AA027163, AI338954, W92057, AA769377, AA811137, AW470052, AA027162, AV713020, AI680487, R19758, AA283191, AA531492, AI700367, BF946853, AW514119, AA644413, AI004120, AW876599, BE868122, AI831977, AI219655, AA197283, H17722, AA890197, N70828, AA164346, AV750338, BF791719, AA164345, AA767095, AA393969, AA765421, H17611, BF247968, AI254347, AA253013, AA534905, AA470446, AA182675, H12230, H43795, T32973, AW386765, AU146033, AA078964, R51414, AI269757, T33350, R45177, AI203452, Z44609, AI041094, AV749975, H43709, BF336945, AI268058, T30703, R85203, R51302, R51996, BE738484, W84649, R51995, AA824604, W01425, AA907096, BF801374, BE544754, AI469616, AU156273, AW297202, T83337, H14279, BE929477, AA252973, BE242053, T18899, AA248529, H14306, BE698663, T33352, BG059012, AA361817, AA236020, AA810717, BE243263, AA876139, BF240162, BF893858, BE217859, F13420, H53830, F08935, AA078866, AV727864, AA721692, Z40480, AI383780, H52715, H48241, AW751348, T83485, AI567913, AI247225, BE694869, BE940539, BE713625, BF858355, BF801742, BF824816, BE713728, BE713771, BE713469, AA463921, C01352, AW608887, BE714022, AW876620, AW876628, N89830, BE002346, AA192537, AA319174, BE714013, AW709029, AW991462, AI080442, BF993596, N59776, AA034034, BF799178, BF818732, AW392976, AW876544, BE568245, AW835734, AK000087.1, AK021899.1, AF217983.1, AC008074.3, AK024658. 1.
HBM96	53	561935	1 - 1062	15 - 1076	AI888795, AA047754, AI561027, BF676343, AA047704, AI187148, AA314069, AA536040, AW976024, AA704393, AI754653, BE973547, AV762633, BF857849, BE897079, AU144320, BF681619, AV757032, AW972919, AW819125, AW151824, AV763457, BF854308, AI306232, AI251576, AA904211, BF589788, AA812058, BE245576, AL042667, AL042670, AI521525, AI891080, AW961593, AI583466, AW274191, BE878926, AW020150, AI459904, T74524, AI280266, AI459943, AA653139, AW572721, F16345, AV729669, AA515728, BF805088, BE350953, AI601229, AA297802, AA747757, AA297145, AI926102, AA629540, AI436433, AI679221, AA084609, BF724838, AW270385, AA164955, H59737, BG029528, AI473995, AI340641, AW504667, AW969831, AA805049, AI858691, AI749893, H07953, AC000057.1, AC008891.7, AC011484.4, AC005920.1, AC005225.2, AC006011.2, AC006126.1, AC005837.1, AL031658.11, AL109825.23, AC005940.3, AC018828.3, AE000658.1, AC008481.7, AC022383.3, AC022425.6, AL109804.41, AL049766.14, AC022384.4, AC004089.25, AC002352.1, AC005015.2, AL512378.7, AC004797.1, Z93930.10, AC009756.9, AC008397.7, AP001711.1, AL035422.12, AL135838.5, AC005519.3, AC008403.6, AL109935.39, AC004878.2, AL590763.1, AC005696.1, AL159977.10, AP001725.1, AC009131.6, AL121983.13, AC005907.1, AC009060.7, AL353807.18, AF1111169.2, AC005231.2, AL121972.17, AL049760.26, AL354932.26, AP000547.1, AC002425.1, AC005544.1, AC011442.5, AL031228.1, AC004526.1, AF243527.1, AC005081.3, AL035681.13, AC005291.1, AC009309.4, AC008440.8, AC032011.14, AL139113.21, AL139022.4,

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HBMBX01	54	705047	1 - 1638	15 - 1652	AW961140, AV653628, AA284390, AW298801, AA325985, R05810, AV647470, AV647506, AV646943, AV646939, BE079602, AI435248, T91124, BE079603, AI217083, R05895, R05360, T84795, AA903614, AA640495, AA654849, AA002218, AA292719, AC004236.1, AL513131.1.
HBMTX26	55	695704	1 - 1294	15 - 1308	AW861714, AV720211, AW973541, AV719822, AW975623, AI061313, BE138594, AW973992, AA833875, AA833896, BG236628, AV756491, AA468505, BE139267, AA284247, AA644090, BE062478, AI733856, AW502873, BE139358, AW410409, AV760508, AI216990, AW237905, AL079734, AW855643, AI753672, AI076228, AW502237, AI755202, AW963463, BF725844, AV700760, AA420546, AI066646, AW970896, AA502991, AA610509, AI912401, AW505253, BE062476, AV758870, AI754653, AW328331, AI284543, AI675615, BF923365, AV718487, AV720729, BE178481, AI625604, BF526964, BE139139, AI250552, AA535216, AL135377, AI053696, AA632744, AI887235, AI251034, AW851816, AA595499, AW243793, AI254779, AW327624, AW271977,

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HBMUH74	56	866160	1 - 712	15 - 726	AL024507.7, AC005216.1, AL355812. 23. AI633540, BE999936, AI529110, AI911597, AW016785, AA479308, AI381011, AI057451, AI283542, AI224172, AI025510, BF929951, AW589256, AU156824, AU155569, BF063133, R43074, R25758, BF818086, AL529111, BE567017, BE077233, H09061, AA479409, AL136843.1, AK001927.1, AK027756.1, AK001324.1, AC009318. 11.
HBMWE61	57	778066	1 - 1104	15 - 1118	AL530335, AW182591, BF435671, AA776879, BF435138, BF435606, AL523150, AA707339, BF055381, BE312352, BF888738, AW513106, AL119508, AI684324, AI827310, AI538166, AI457932, AI420719, AI889349, AW026348, AA456678, AI567105, AW316798, AI362960, AI313262, AL523149, AW189249, R42782, AA564318, AA995148, AA598982, AA161330, N30438, N30445, AW771697, AA448673, AI334337, AA194840, AW149443, T99604, AW969668, AI915277, AU145646, AA214246, AW085918, AA161331, AA501503, T57340, F36146, BE700927, AA528196, AW956355, AA436448, AA436494, AW339369, AW467983, F10251, BF057117, AI049659, N67950, BF934197, AA653249, AI805953, Z39922, BE700856, AW137398, BF927130, N94961, R56027, AA377531, W38702, H39550, AW878949, AF349719.1, AK027861.1, AF349721.1, AL049732.1, AB029037.1, AF349722.1, AF349720.1, AK001300.1, AK027489.1, U04811.1, AC021713. 7.
HBNAX40	58	834801	1 - 2779	15 - 2793	BF966078, BF792338, BF034911, BF217973, BE883387, BF947401, BF574197, BF060683, BE220005, BE645102, AI808818, AU158323, BE222311, BE467629, BF985268, AA203305, BE504175, BE612371, BE504478, AI890286, BF514573, AW173142, AI674096, BE301797, AW962903, AI674111, AI935063, AW958697, BE931820, AI431629, AI418384, AU157624, AW958686, H10461, AW995348, AW511978, AA864829, N29528, AI287632, AU157306, AW206871, AI381961, BE018315, AW238878, R61198, H80193, AA531283, AA565321, AW073280, AW026572, AW243789, AI819460, AI913516, BE503173, AA305587, AA305897, AW952734, BE815642, C01749, H10462, R58932, AI040839, T17118, R62976, H17748, H11865, R63031, AA970617, AI247608, R63338, T07723, AA774553, AA371079, BF084654, AA329699, BF802622, AW139568, AW027833, R61199, H11505, N57467, R19912, BE695240, R63337, R06902, AA337757, R33944, R14158, T55659, AA247547, AU140145, AA329948, AI872648, H117635, T55578, AI802966, N67275, R40453, AA318909, AA039614, AI565257, AI540752, AW865932, N46626, R06946, N40466, T25153, AI444969, AI262121, H78817, AW150803, AI003014, AI457343, N34900, AK023746.1, AF264912.1, AF305081.1, AF329696.1, AF342982.1, AL356305. 11.
HBNBJ76	59	810332	1 - 1960	15 - 1974	AL534356, AL529732, AL534050, AL534051, BE745824, BF966566, BF966920, AU143029, BE250074, BE743214, BE293428, AA521297, BE293836, BE890115, BE273039, BG029074, AW576992, BF920823, BE299201, AU147440, BE262643, BE297473, AU160197, AA237063, AW749171, BE899113, AI818118, AA477060, AL522323, AI863128, AI094964, AL526791, BE541518, BG001429, AI073714, AA557526, BE312979, AI688523, BE880788, BF693443, AI818673, AA476949, AA504527, AA237017, AI754204, AI073509, AA236864, BF846722, AW129564, AI075855, BE305107, AI078504, AA503761, AW953337, AA410682, AI906296, BF921511, AI620391, BF930664, H28108, BF934123, BF930777, T80380, BF934139, BF921439, AI669584, AI074509, BF921504, AV696486, BF920987, BF921181, BF930672, BE619914, BF921183, AI540579, AI087186, BF930838, AL526822, AI342200,



HBQAC57	60	793814	1 - 2097	15 - 2111	<p>AI190396, N25006, BF930678, D53101, H15668, R91002, AW189172, BF921415, BF920975, AI445693, AA504456, BF568918, BF512279, AA235460, T33078, H38314, N23507, H15669, H41352, AI688360, T33077, BF921110, AW168851, AA932279, W28365, H06522, T16220, R50974, BF929910, H93073, R66792, H49516, AA432099, BF809362, BE787105, BE243707, H17715, F24147, BF939372, BE047893, AA835754, BG003276, AA235568, AA584011, BE398065, T33748, W99346, BG004624, H95616, AA938420, AA292524, AI372738, H09967, AI569025, BF921193, H30757, BF802828, AA719210, AA322159, H97134, BF930773, N23060, R88745, BF877775, R43985, AL135592, D45278, H98793, W99304, H06577, H17097, AI541278, T34955, H23692, Z39225, H88727, BF894389, T32634, H95901, BE207940, W16965, AA831137, BF926660, N55137, F32307, C15500, AA191241, R81752, T30362, F10931, R35432, AA362861, AA852184, BF946139, R13653, T31151, H95902, Z42100, N89617, AW731979, R85881, BF946142, F01633, AW674315, AW882084, AI372739, F10929, AA322320, AA337191, AA446785, AA360857, Z43144, R38598, AA938068, R39608, AW795181, T31175, T09252, BF946140, R38830, BF812774, D52713, AA350382, AA251259, T33747, T53545, T03354, AA505949, R49230, R13752, BF946137, BF818030, BF798116, AA429879, BG007235, AA830961, C15188, H93938, R84492, T33382, AI372737, R14418, AI025547, AA716021, AI005001, AI372403, AW380183, BF880404, AA331873, BF924213, BE543234, AI208872, BF526157, BF762225, BC003691.1, AK026126.1, AC004453.1, AB028991.1, AK025555.1, AK024226. 1.</p>
HBQAC57	60	793814	1 - 2097	15 - 2111	AI087837, AL589906. 3.
HBSAK32	61	856387	1 - 578	15 - 592	<p>AI740936, AI742064, AI832483, BE856354, W89126, AI741855, AA552666, AL525133, AW293469, AI032044, AI769344, AI199155, AL537059, AA769290, AA481420, AA425849, AA968823, R73406, AW290963, AA653956, AA481658, AA244354, BF477489, AI278115, BF664060, N92264, AI014386, N45235, AA723656, AI354229, BE041734, W24441, BE350121, BG109716, R73405, BF690465, AI675727, AL530882, AA570628, AA992527, AW089841, BE858139, C21531, AA029467, AA029534, AI951077, BG004006, AK026029.1, AL442086.1, AL161656. 20.</p>
HBXCM66	62	639039	1 - 996	15 - 1010	<p>AW970983, AA311432, AA515629, AA515360, AW973992, BF804385, AL046519, AV703785, AA502991, BE968744, AA631507, AI206841, AV763026, AV763058, AW613805, AW340905, AI431303, AI366555, AW873061, AI284640, AW270258, AW341903, AA809546, AI821716, AI613389, AV704541, AI499954, AA533025, AW438542, AL079734, AV655282, AL079645, AL046409, AW023672, N23504, AW419262, AV759632, AI061313, AW872736, AI189682, AV738383, AA533176, AW193265, AW069227, AW023111, BF725844, BE139139, AI284543, AI254770, AW979087, AW026305, AI421950, AI419337, AW872676, AW970981, AL038936, AI634187, AA515351, AV762633, AW327624, AI251034, AI223626, AW407578, AI635440, AI003611, AI801482, AI250552, AI754170, AW574899, AI251284, AI251203, AW130188, AW303196, BF827410, AV755512, AI355559, AV763584, AW845366, AW979241, AI891080, AF123761.1, AP001711.1, AL356805.5, AL122015.17, AC019205.4, AL035249.6, AC009247.12, AP000744.4, AL356214.20, AL356915.19, AL133545.10, AP001725.1, AP000252.1, AL445222.9, AL133453.3, AL117258.4, AB023050.1, AC005077.5, U80017.1, AC012476.8, AC004560.1, AP000557.2, AP000925.5, AC011444.5,</p>

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HBXCX15	63	637542	1 - 1205	15 - 1219	AA595781, AW277007, AI274544, AA548746, AC006329.5, AC009412. 6.
HCDBO32	64	831942	1 - 2616	15 - 2630	AL537440, AL531001, AL531000, AU118775, BE613081, AW976126, BE739778, BE612415, BE886668, AW965087, BF671603, BF114976, BF001395, BF104843, BG169691, BF790959, AU145261, AI524826, AV700940, BF115561, AI628083, BE501914, BF028814, BG107506, AA456561,

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HCE2H52	65	847007	1 - 1262	15 - 1276	AI821394, F08688, AW812688, AA826667, BE089841, H54483, AV714369, AW812690, U49973.1, AC016395.4, AC010386.5, AC026463.4, AC004828.2, AL160237.4, AL137787.11, AL353643.10, AC064875.5, AC002456.1, AL049838.3, AP002087.2, AC016574.6, AC008598.5, AC004941.2, AL162719.18, AL136168.4, AC018719.4, AL136419.2, AC006211.1, AL121944.14, AC005544.1, AP001818.2, AL136146.10, AL158093.8, AC022016.6, AC068724.7, AL121865.7, AC008806.4, Z99497.1, AC019106.3, AC011299.3, AL121894.26, AC010884.10, AL133257.17, AP002340.3, AB020862.1, AC026172.3, AC024163.2, AC006213.1, AC022081. 32.
HCE3B04	66	831151	1 - 1793	15 - 1807	BF341078, BG028747, BE879916, BF059108, AW300205, BF034862, BE048884, BF195876, AI636211, AW117753, BF573148, BF197549, AW954937, N91173, AW168897, AA983273, AI374834, AW002887, AI435122, AI674869, BE673355, BE671667, AW081459, AW271351, AW237603, AI818463, AI025174, BF691042, AW952156, BF832239, BF089340, AI559577, AA758512, N48695, BF790935, BF211459, AI492924, AW168956, AA291263, BF738867, AI476602, AA209287, AI953330, AI702174, AI590318, N29813, AA653205, BE645737, AA908587, W19735, AI679742, AA255954, BF666339, N49753, AW087559, BF571795, M86083, AI303020, AA148623, N89992, T31216, T16818, N72208, AA642349, N45545, AL044337, AW515018, W19616, AA256117, AI276869, N52681, T86722, D61438, N59844, AW391658, N51450, AA319376, W31671, BF839545, AI702072, AI623267, BF381609, AI692792, AI014575, AW151467, AW389355, BF751083, D57869, N22895, BF752070, BF748108, AW449444, N55976, N90029, BE565819, BF908853, AW601227, BE074229, W17143, BF751076, BF751211, BE869711, BF154561, AB043587.1, AF020762.1, AK025520. 1.
HCE5F78	67	838101	1 - 1718	15 - 1732	AC007318.4, AK025051. 1.
HCEEE79	68	560609	1 - 1038	15 - 1052	AL353658.33.
HCEEQ25	69	531784	1 - 978	15 - 992	AW444547, BF514399, AL534267, AI567447, BE747694, BG152517, AW298411, AW865264, AA807579, AA554958, BE889430, AA612578, BF798462, AI078409, AU157259, AI819391, AA643770, AU120121, H77386, AW438907, U78181.1, U78180.1, AC003687.1, AC073838.6, AL157823.9, AC008962.8, AC011005.7, AC002094.1, AC007220.4, AL136984.20, AC020750.3, AL031666.6, AL136110.17, AL161781.12, AC026191.3, AC020744.4, AL031672.13, AL162424.20, AC002425.1, AL022721.1, AL353665.13, Z75887.1, Y10196.1, AL139340.12, AL356257.14, AC021863.5,

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HCEEU18	70	688041	1 - 1215	15 - 1229	AL045384, AL042668, A1525108, T85422, AL046089, BE843928, H08562, AA921935, AA815292, AW972431, F23282, BE794230, U91320.1, AC026400.3, AC008469.4, AB018295.1, AL117630.1, AC009032.7, AC003043.1, AC008745.6, AC007405.6, AC018648.5, AL354932.26, AC004867.5, AL117381.32, AC084865.2, AC004967.3, AC013429.12, AL121808.4, AC020754.4, AC005098.2, AC016395.4, AL050335.32, AC005088.2, AC020913.6, AF001548.1, AC004876.2, U91321.1, AF334404.1, AC005279.1, AL355392.7, AC011497.6, AL031658.11, AC008440.8, AC005412.6, AL445222.9, AC005231.2, AC005089.2, AC018711.4, AC019205.4, AC026191.3, AC011490.7, AL161626.20, AL109897.30, Z98051.6, AC011495.6, AL137792.11, AC009087.4, AL133215.16, AC010271.6, AL136305.14, AC004125.1, AC020915.6, AC007052.4, AC004815.2, AC006357.5, AC005944.1, AC004703.1, AC090955.2, AC004019.20, AC004813.2, AC011479.6, AF168787.1, AC012384.16, AC004797.1, AC011443.6, AC005052.2, AC007282.4, AL080243.21, AL031680.20, Z84469.1, AC006116.1, Z84466.1, AC007374.6, AP001717.1, AC007956.5, AL449305.4, AP003352.2, AC006014.2, AL034549.19, AC0078962.30, AF030453.1, AC051619.7, AL049761.11, AC006454.3, AC005821.1, AL133551.13, AL157938.22, AL009181.1, AL133353.6, AL031670.6, AC005488.2, AC000025.2, AF205588.1, AC012076.4, AL355094.3, AC011455.6, AC020934.7, AL157372.18, AC087094.2, AC008397.7, AC083863.2, AC005527.3, AC022515.5, AC004966.2, AC009086.5, AC022384.4, AC005056.2, AL049795.20, AC004841.2, AL121825.19, AC002425.1, AL121900.26, AC055120.5, AP000687.2, AC021999.4, U80017.1, AC022392.4, AL132713.11, AC008403.6, AC018644.6, AC036103.8, AC020663.1, AC018719.4, AC027319.5, AL118505.17, AC002039. 1.
HCEZF82	71	831745	1 - 1797	15 - 1811	BF981465, BF688419, BF969763, BG178653, BE730527, A1672493, N21040, BE395792, AW386160, BE858812, A1672483, BF530193, A1693512, AV751914, BG180158, A1138621, BG104179, AA778387, AA173791, BF939691, AW615384, AW960851, AW594109, BF091657, A1022755, AA209239, A1077708, A1824069, A1936432, A1038303, N39250, A1927782, A1457926, A1436138, A1056772, A1079503, N58793, A1016045, AA210850, A1096581, AA062719, W88815, AA725072, A1375410, AA669791, BE300887, BF431891, A173843, W31742, W88816, A1740977, BE727603, A1086937, AA704681, A1190844, A1341909, A1365029, N46695, BF590052, AV749863, A1086941, A1676179, AA826493, AA554932, AA789007, BF111593, AA917998, R08679, AA889734, W04647, AA321894, A1912831, AV750240, A1239655, BF592139, H71960, A1368377, AA992261, BE277655, H78240, H78440, A1470391, R37067, AV694383, A1700804, R44781, AW612991, R10835, H96434, N77482, AA314780, R44068, AV751269, R08587, AV697548, A1419628, BE218690, N90646, H65409, BF530646, AA836620, W26811, R10834, AV660888, AV747670, AA905784, A1086303, H84253, A1086248, AV723953, BE881061, BG110517, BE047952, BG180996, AV682466, BF107905, A1312428,

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HCEGG08	72	844506	1 - 2520	15 - 2534	<p>AK000083.1, AB056809.1, AL110221.1, BC007680.1, AK026452.1, AB047904.1, AL353956.1, AF056191.1, BC006195.1, AL136784.1, AF104032.1, AF091084.1, AL512750.1, AL512718.1, AK026045.1, AB060863.1, AF125949.1, AL137488.1, AL390167.1, AL080124.1, AL137276.1, AL050277.1, AB048953.1, AL512761.1, AL137271.1, AL359596.1, AB063046.1, AB055366.1, AF120268.1, AJ242859.1, AK025632.1, AL080127.1, AB049758.1, AK026924.1, AL137550.1, U72621.3, BC001418.2, AK024594.1, AB051158.1, BC006440.1, AL049283.1, Y10936.1, AK025375.1, AK025414.1, AK025573.1, AB060852.1, AL512689.1, AL122100.1, AL583915.1, AL110225.1, AL136892.1, AY034001.1, AK026600.1, D83032.1, BC007021.1, BC003687.1, AB047878.1, AL136884.1, BC008488.1, Y14040.1, BC002839.1, AL389983.1, BC008899.1, AK000137.1, AL049466.1, AK026959.1, AB048954.1, AB063088.1, AL136893.1, BC008282.1, BC004119.1, AL136586.1, AF090901.1, AL122093.1, BC008893.1, AB060214.1, AL096751.1, BC008365.1, AL080060.1, AK027113.1, AB060912.1, AL162083.1, AL136767.1, AL049938.1, AL512684.1, BC002647.1, AK000445.1, BC006408.1, AF069506.1, AK025084.1, BC007556.1, AL133075.1, BC003548.1, AL137533.1, BC008078.1, AL136864.1, AL137548.1, AF106862.1, BC006832.1, AK026591.1, AL133560.1, AK000652.1.</p> <p>BF347820, BF340446, BE963976, AV706183, AV702427, AV728270, AV707783, AV706724, BE619195, BF436323, AV725927, AV706746, AV726505, AV658362, AV701611, AV704592, AV723449, AV730781, AV727932, AV732149, AV730288, AV704974, AV751921, AV659189, AV731313, AV752043, AV753374, AV731744, AV725369, AV731708, AA910649, AV702637, AV730547, AV761002, AV760693, AV731977, AV732002, AV731043, AV746276, AV731694, AV726674, AV730711, AV702798, AV662191, AV729983, AV731759, AV752443, AV751555, AV710938, AV731275, AV751573, AV732653, AV730171, AV701237, AV732353, AV730165, AV732155, AI815089, AV757088, AV710534, AV701320, AV730816, AV704916, AV731915, AV656240, AV707088, AV733303, AV756895, AV757887, AV705020, AV756053, AV755874, AV752447, AV758481, AV726067, AV705263, AV711496, AV711240, AV732089, AV710417, AV745906, AV711274, AV732746, AV702869, AV647654, AV728872, AV745415, AA701287, AV758003, AV706104, AV707117, AV727103, AV652156, AV758133, AV710825, AV711567, AV702409, AV763440, AV757553, AV710495, AV723452, AV761270, AV710375, AV728777, AV727189, AV702354, AV707171, AV729129, AV702498, AV714368, AV707686, AV763171, AV702787, AV75473, AV752684, AV709897, AV721645, AV710562, AV710906, AV746382, AV706357, AV707882, AV710935, AV687176, AV755714, H17354, AV725387, AV705234, AV705280, AV725386, AV706035, AV705047, AV757171, AV763669, AV727355, AI338026, AV704611, AV730778, AV709407, AV707685, AV704116, AV752993, AV732200, AV703012, AV730859, AV646736, AV724987, AA725780, AV702581, AV756386, AV757864, AV704924, AV701783, AV728715, AV703417, AV755335, AV701728, AV693117, AV757686, AV757281, AV702671, AV729357, AV702954, AV721318, AV728455, AV730456, AW295635, AV707589, AV709935, AV730866, AV707948, AV726520, AV758766, AV705662, AV697638, AV732255, AV706683,</p>
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HCFLN88	73	610000	1 - 1420	15 - 1434	<p>AL526786, BE622815, BE746913, BG167566, BE612603, BE613343, BE543099, AW328570, A1084727, AW511229, BE879597, AA643500, A1090381, BE876617, AW055002, A1744096, AA714840, A1148138, AA598703, AW340721, BE559510, A1125728, A1830384, AU151986, A1885716, BF432640, A1475597, AW339888, A1377299, A1309247, AW005497, AW771450, BE622365, A1139390, A1422379, N95665, A1144110, BF341713, A1919264, A1475648, A1189926, BF809564, A1559248, BE396630, A1817016, A1640708, AA825735, AV662025, BF526593, A1708507, AA935563, AW939178, AW939138, AW939190, AA961207, N66071, N69365, AA603786, AW939128, A1285062, A1826293, AW951255, BF512843, AA620317, AW605529, N80991, A1285338, AW381729, BF956527, A1031873, AW381749, BG056758, AW371517, AW381756, R78288, A1434319, A1282698, A1343784, AW002119, AW169595, N48713, AW371499, A1537993, N26561, R52366, A1916353, R93746, BE828699, AA835499, AW072300, W70306, AA907306, AW748173, N68294, A1468129, BG032430, H89920, A1080137, AA326474, H69097, AA826574, AW303330, A1858652, A1804227, AA322294, A1342977, AA291513, N35677, A1824463, T86711, H49562, Z19236, A1500205, AW966976, A1187820, R78289, A1525884, W76006, BE828722, N81088, F37932, R31642, AA905077, AA922535, AA877249, BF957167, AA780926, BG055657, AW087260, A1202070, A129497, AA911554, AA045568, R32359, AA204681, AA057054, AA364763, R63145, A1277392, A1886719, BE616036, AW238934, A1082383, BG164867, BG150873, BE548567, BG035187, N91393, BF957863, H69096, R88359, AW328569, BF743483, BF742356, BC001967.1, BC000956.2, AC005089.2, X89985.1, AJ223979.1.</p>
HCFLT90	74	788578	1 - 896	15 - 910	<p>BG164543, BG254195, BE569122, BF701728, BE883133, BG164607, BE564055, BE621682, BE621082,</p>

HCQCM24	75	845070	1 - 1915	15 - 1929	<p>BE548066, BG164527, BE439646, BF212991, BF669801, BF679424, BF699188, AW958367, BF696977, AI300093, BF104175, BE896610, BF382702, N73920, AI301065, BE327267, AV714574, BF382383, AA131247, AA417682, AA053860, BF681596, BF242641, BE909206, BE327067, W80481, BF666642, AW263496, BF696681, AI479737, AI499701, W56158, AA922117, AA781414, AA131515, AW104450, AA001425, AV754612, AW630854, AW274584, T66256, AW173171, BG252902, AA258280, AA026671, BF679441, AA256918, AW071970, AW817587, AA019198, BF695475, AA054011, AA026632, AA954721, AI926512, AI393574, AA742324, AA972701, AI685317, W47268, BE856240, AA434451, AW630034, AV713327, AI305153, BF673772, AA678370, AW613806, AI356800, AI280399, AI200095, AI749979, AI334386, BE262340, AA837589, AA164369, AW627592, N30835, AI491703, AI073728, AI422897, N48017, AV744241, AI218584, AA885442, AI367984, H16890, BF029129, AI282124, AA054252, W47269, N36665, AA053948, BE439592, AA731678, AI273274, AW166832, R94765, AW338258, BG027442, BE710524, AA256494, AV764328, AI086693, BF381741, AW022998, AI347082, R21151, AA743354, AI200245, H84116, AI280442, R73589, AI698561, BF029639, F12140, AA054003, R72975, AA480586, H03499, W78713, AW182912, BF208960, D79117, AA026691, AA713938, BE958068, R69294, AI381988, BF765409, R69295, BF765699, AI948431, H03608, R34494, AA379320, BF091606, AA019166, AA026702, H84115, AA095757, BE708262, BF197074, AA365458, C01000, AA044911, AA417566, AA877878, AI354865. 9.</p> <p>AI905478, AW963993, AV701494, AA528253, W37762, BF970457, AW771888, AI905529, BE817678, W37779, BE817676, BE817671, AI245339, AI650320, BG164304, AA524462, AW241742, BE539666, AA532816, AI261199, AW024681, BE817677, BE540718, AI073889, AA634509, AA430047, BG105129, AI301532, BE817544, BE567771, AI284328, W37840, AA946995, AI261595, AA430256, AI557710, AI367914, AW802496, AW470760, AI254217, BF856116, AW183037, BF673560, BE770611, BF855193, AI886042, BE817655, AW802501, AA587825, W31581, AI632720, AI952748, AI204507, AW451863, AI659684, R21943, BE176747, BE003678, BE003673, BE837515, AW866502, AA854919, BG169910, AI608737, BE003667, BE003665, AA902893, BE817476, BE817652, BE176749, BE817470, AW176042, AW866504, BE003676, AA112330, BE817478, BE536935, AA284617, H92723, BF445303, R28123, BF222392, BE003682, AA626191, BF475670, BE817645, AI797583, AA377172, AA579168, T90137, AW363872, AW070545, AI796563, AA069314, AW960665, H57105, AA614369, R28013, BE081148, AI922451, AI824371, BF818434, BF818436, BE837483, BE817451, BF229149, AA314230, BF846051, AW994489, AI972085, AA809584, AA594344, AW299894, BE769260, BE827354, AW299537, AW148344, BE067485, AW148392, BE817444, BE086250, BE855526, AW802489, AW603877, BE817576, BE772109, AW603875, AA345280, BF819869, AA886302, BE817574, BG008318, AI694024, BE837418, BF677528, BF435329, BE928914, AI417951, AA644043, AV655280, AV708704, AV656903, AV725208, AV693523, BG170240, AV661704, AV659536, AV705280, AV687035, AV708980, AV656478, AW058628, AV659322, AV696931, AV651955, AV708025, AV708992, AV692691, AV697196, AV729220, AV728518, AV697288, AV656256, AV727787, AV704234, AV660728, AV729378, AV701914, AV708381, AV709314, AV691080,</p>
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HCRAY10	76	695709	1 - 774	15 - 788	AW967618, AI739035, AW438908, AI435334, AI401755, BF345349, BF038771, AI591140, BE782687, BE871616, AI204170, AA731364, AA251459, AA432147, AA446655, AI003558, BF885284, AI961996, AA593594, AI381200, AI190639, AA507216, R79970, AI682154, AI673081, AW613695, AI500259, AW663327, AA447459, AI742455, AA398391, AA401707, H97579, AI263813, AI149747, R69328, BE350370, BF528073, R80068, AA670245, AA251458, AA643922, AA852081, AI693283, BG149181, AA89222, BF921924, BE562515, AW452847, BF034010, AW384844, BC008671.1, AL391669. 11.
HCRBF72	77	828945	1 - 1250	15 - 1264	BE903557, BE562899, AA662845, BG026497, BG258810, BE882205, BE562161, BE514464, BF982018, BE514007, BE561003, BE267962, BF206694, BG259321, BG256701, BF034175, BE384720, BF127787, BE397447, BF195027, AW069723, BE397483, BF673575, AI678045, BE560321, BE270102, BG060101, AA808954, BG178034, AI817075, BE268098, BE396490, AA135359, BF339022, AI934623, C06498, AI346937, AA904052, AI934641, W77999, AI318369, AW406479, AA172174, F20535, W47056, BG112636, R54743, AW207802, AW204511, BG104670, AA076651, BE879340, BF887485, BF744650, W79458, AI085220, AI499014, AI638001, AA680169, AI636880, AI202349, AI146448, R02577, BF222835, AI880070, AI652019, AA993790, AI185138, AA293812, AW404542, AA773444, AW510958, R02696, AA402460, AI219673, AW590008, AI880183, AI365185, AI632130, BE092777, AA974194, BE092773, BE890583, AI480049, BE092744, AA137236, D20372, AA172327, BE092749, R28874, AA079559, T92834, AF157482.1, AK027327.1, AF139365.1, AF072933.1, AF080398. 1.
HCRNF78	78	793774	1 - 878	15 - 892	AW772509, AI082249, AI917738, AW963994, AI765311, AI146483, AI569854, AW963992, AW469770, R60843, AI079350, AW015424, R34737, AA127263, AI860770, AI094178, AA580273, AI886702, AI886517, T80049, BE895381, AA127262, AA377155, AI024477, BF326792, AV707332, AI744759, AW861944, AW858525, AW858526, AW877209, AI119324, AW858455, AW604723, AW372827, AW577135, AW804686, AK001104.1, AL355102.5, AL133095.1, AB026436. 1.
HCUAF85	79	589520	1 - 583	15 - 597	
HCUCF89	80	637986	1 - 516	15 - 530	AI524118, BE277210, AL039145, BF698704, BE276480, BE409047, BF698510, BG150796, BF6666395, AW089101, BF945647, BE274150, BF699964, AL038072, AU121417, AI630176, AA847952, AW410354, AP001759.1, AC069162.8, AC091529.1, AC018787.5, AL138706.9, AC006449.19, AP000744.4, AK023598.1, AL513550.9, AP001468.1, AC006014.2, AL035691.17, AE0000658.1,

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HCUCK44	81	790277	1 - 1129	15 - 1143	AL532468, BE621866, AL521895, BE621760, BE538472, AL521894, AV734260, AV723629, BE770935, BE790853, AI140351, BE621673, BG168718, BF793790, BE908998, BE545559, BE616433, BE395052, BE621070, BG164550, BF664130, BE937841, AI859347, AV696398, AW977552, BE731169, BE514231, BE312999, BE717043, AV696286, BF726404, BE018100, BE717057, AA121548, AI815642, AA768342, BF326554, BE281457, BF430984, AI864674, AA530873, BF338307, BE717061, BF977210, AA127712, BE676694, AA722381, BE717055, BF971805, BE795728, BE717048, AA987515, AW275917, AA417302, AI354682, AI859814, BF686844, BG035461, AW474962, N92869, AI025466, AA768339, BE396293, BE301588, AI051671, AW753719, BE965688, BE812296, AI920875, AW089493, BE535563, AW190165, R83064, AI130959, BE717112, AA587755, AA045598, N21328, AV712375, AA314322, AA844332, AW578738, AA100477, AI371694, AA043186, AI567303, BE717183, BE891492, BF809525, AI350331, AI039892, AW193146, AA828283, AI952434, BE717068, AW377665, AI289086, AA100476, AI014387, AA917482, BE560356, AA975893, N21020, AA045597, AV758595, AV760858, H94056, AA306867, AA621534, AW406948, BE218977, AI564973, BE741064, AA729835, BF594159, AA417265, AI187288, BE548903, AA661773, BF027132, H80956, W04309, AA649285, AW615725, AI419448, AW088039, N47889, AI952495, R89903, AI816957, BE927438, AI083853, BF029994, AW103201, AA580315, N27984, AI289415, T40562, BF593347, D82429, N80197, AI018462, AA868207, AI873582, AI955989, H81296, BE616655, AW138496, AI833059, AI288157, T91268, R63140, BE044820, BF594190, AA130829, D12288, AA298770, AW952882, AI699667, AI942324, AA310276, W22908, BG165580, AI091426, BE829457, BE829712, BE829791, BE829635, BE829638, AA074395, D12293, BE829628, T91580, AV737050, H81350, BE536089, AA353671, AA053266, AI202414, AI832968, BF382776, AA342277, AW084334, BE833477, W25596, AW886418, BE829841, AA297193, BF797820, AW351513, BF245513, AW377656, T98269, AA342276, D12294, BF086669, BF084242, BE833566, BF084293, AI908913, BF084274, AI868829, BE771088, BF155956, BF084243, BF084295, BF084296, BF086521, BE817957, BF084297, R83013, BF084208, BF084209, BF084211, BE928501, BF086673, BF086541, BF093333, BF089556, BF084298, AI220723, BE928502, BF093356, BF093368, BF093353, BF084241, T85780, BF084260, AA344066, BE870474, AA382073, BF084210, BE253749, BF086528, BF155939, AI310801, BE817887, BF093347, BE928490, AI866230, BE696034, BF084199, BF093349, AI908912, AA807562, BF095869, T91628, AA193223, BF095965, BE747715, AL122042.1, AC007842.1, BC004512.1, AP000892.4, N51146, N74141, AA100050.
HCUDD64	82	835082	1 - 388	15 - 402	BF109963, AI870761, AI149403, BE675981, AI979111, AI590348, AI769440, AA568609, F04371,

						R68556, N24429, R85927, AW973928, W02539, BG150863, R79201, N69412, R79466, T80848, AI494453, R28549, AW440020, AL390151. I.
HCWAE64	83	535893	1 - 457	15 - 471		AL043265, BE895962, BF091850, BF924502, BF930204, AW973724, BE906549, BF972009, AA558125, BG163769, AW993087.
HCWFU39	84	651316	1 - 453	15 - 467		BF955180, AL538374, AA349755, AL535774, R50877, AW903429, AW450150, AW961956, RI5175, T05199, T08208, Z42650, AI459735, H17893, T31283, T40055, R60267, BF961532, T08351, AP000427.3, AB040905.1, AK000373. I.
HCWUL09	85	834722	1 - 747	15 - 761		AL138741.13.
HDHAA42	86	695710	1 - 929	15 - 943		BG168654, BF966805, BE908431, AI669827, BF968985, AI675110, AI916264, AI022830, AI003782, AW473663, AA404248, AA404272, AI480396, BF968064, AI819299, BF448122, AA019330, AW628193, W68651, AV716046, AA644583, W60067, AW016873, BF222235, BF432033, H26918, AA401281, AU156898, AI702463, D60528, BG252567, D59970, AW902065, AA903799, BG252566, C04408, C14658, AV728633, T89454, AA401283, BE702259, BE702050, AA002068, R42519, AI138897, AA834487, AI695264, AW369806, BF669272, AA974451, BE870958, AI961900, BF670633, T89543, AA383388, Z41482, BF184645, BF028198, BF664878, BF944768, BE765788, AA002198, AI564290, AI560004, AW087987, AI687568, AI306562, AI560651, AW132107, AW085963, AI539545, AI648684, AI696611, AI690692, N25033, AW117806, AI366922, AI678446, AI370322, AI440444, AW008226, AL045349, AI446704, AI623673, AI609096, AI955943, AW089351, AA830955, AV750565, AI280607, AA829775, AI803740, AI936003, AL049629.28, AK001943.1, AL136625.1, AL133653.1, AK000636.1, BC005070.1, AB056420.1, AF115392. I.
HDHEB76	87	553622	1 - 483	15 - 497		
HDPCW16	88	840358	1 - 1522	15 - 1536		AL046424, AL520269, AL530345, AL520270, AL525169, BF337231, BG118238, BE798545, AW246567, BF970663, BF965787, BF969366, BE783929, BE793384, BE266986, BF528633, BF347353, AL525170, AI815776, BF344880, BF792135, AW793516, BE263579, AW297948, AW296357, BG059919, BF968412, BE261945, AW364801, BE070095, AW516100, AI859217, AI205184, BE350228, AW245703, AW248385, AW008242, AI674610, AA450134, AA677778, AW191853, AW083410, AI973282, BF155249, AI500208, AI359204, BF961380, AI571182, AA593565, BG025370, AW194193, AI214035, AV698756, AI659973, H17114, AA225572, AW245580, AW247948, AW954225, AA861285, BF745614, AI927559, BE265979, AA775443, AW015750, H18943, AA642634, BF836642, AW732061, AA665550, AA678588, AI817267, D60749, AI674941, AF009759, H74159, D60750, Z40715, AI698885, AA564889, AA687090, AA225638, AA468959, D51256, AI435027, T91353, BF593487, AI520908, AI597773, AI865553, AI694877, AI041194, AW135397, RI2563, H17219, AA777103, BF834394, AA337430, AA694470, BF916766, BG111049, AI872869, AI572751, AI927445, D81096, AI342344, T30521, T91440, T30520, AA662525, AW149871, AI312176, T30121, AA090561, T15863, AI985606, AI053516, N88658, AI566726, R09913, R62464, AA339338, AA523081, AW961065, BF222090, AA927388, AW874224, AA558682, AA478552, BF111253, BF855358, BF209274, BF677966, M78952, T32904, BF957728, AW059622, BE746763, AL047548, AF108658.1,

					AL050118.1, AC004228.2, AF084559.1, AK027459.1, AK027577.1, AK027513.1, AF126799.1, AF139813.1, AC004770. 1.
HDPDI72	89	897277	1 - 1536	15 - 1550	AV717810, AC018828.3, AC011464.5, AC022383.3, AC022384.4, AC034193.4, AC002472.6, AC021015.4, AC008119.6, AL356299.16, AC004951.5, AC018808.4, AF003626.1, AP000215. 1.
HDPDJ58	90	587265	1 - 1983	15 - 1997	AW629326, AA642298, AW973571, AW293886, AA714702, AA489697, AW665911, AW119199, AA553561, AW768356, AA744636, AI806778, AA768815, AI221150, AA732540, AV713604, BE247593, T84374, AA354491, T07354, AW273936, AA648816, AI199572, AL133087.1, AC013264.4, AL117381.32, AC019105. 7.
HDPFF10	91	853513	1 - 2568	15 - 2582	BG258479, BF796825, BF821423, AA534416, BF821426, BF879214, BE463469, AW886669, BF368287, BF794125, T91577, T91625, AW299992, AI689842, BF590018, BE818151, AA782975.
HDPFU43	92	790189	1 - 1890	15 - 1904	BF983796, AV653552, BE259910, AI766649, AV703996, BF304737, BF433988, AA700236, BE178896, AI338643, AI354469, AI823774, AI379434, AI139748, AA934777, AI424295, AI280893, AI360455, AI539184, AI750403, BE184282, BF675256, AI262328, AV653641, AV687758, AV688883, AI538841, AV683306, AV686477, AV687759, AV688680, AA903947, AV689834, AW957949, AI079715, AA128542, AI160482, AW804386, AA459614, BF770031, AW014830, BF848624, AW859834, AV685347, H94111, BF807109, AW470950, AA316165, AI400889, AA459389, BF924526, AI083688, AA374022, AW086191, R45973, W21315, R63000, BF798131, N93502, BF798175, AA304841, T39902, BF839163, C02619, AI373388, AV752433, AI750402, H94110, AI015368, AI916914, AA531491, AA215914, AW051088, BG180527, AW983783, AI470293, AV681824, AW023338, AW827289, AI929108, BF814357, AI440263, AA579232, AL040694, AI433590, AL042627, AW087445, BF871314, AW162194, AI537677, AI698391, AL037454, BF910810, AI923989, AV738730, BF904265, AV723064, AI345688, BF792445, AI921379, AV657079, AW020397, AV702021, BF814018, AI859991, BF184134, AA808175, AL043975, BE964614, AI446538, AW827118, AW150511, BE908107, BE965121, AV756990, AL514823, BE965758, BE906419, AV714036, AV682345, BE965621, AI623941, AI969655, BF750879, BG031068, BG036067, AI340519, AW452992, AW128931, BG113169, BE972047, BE538997, AL049085, BG260052, BE904851, AV717927, AL110306, AA635382, AW834221, AV706915, AI251221, AW022682, BG165323, BE965432, BE967307, BE965067, AW881086, AI340603, AI560099, AA427700, BE775251, BE965599, AI284509, AI863241, AA857847, AI866465, AI524608, AI538850, AA420722, AI918634, AL039011, BE439835, AW020048, AL080033, AI567351, AW089844, AA613907, AW163554, AI050666, T99953, BG256950, AW075084, BF885000, BG027280, BE878028, BE885490, AI349937, AI334884, AI307708, AL036187, AI963068, AI312325, BF925729, BF218049, AV761001, BG168696, BG179666, AV728833, AI671642, AI801325, AV729462, AI565172, AI307520, AV759235, BG104769, F29308, AA883351, BF966050, AI621341, BG105895, AL119836, AI269323, AI475371, AV718300, AV757781, AI564166, BE964700, AV742848, BE047833, BF835250, AW128855, AW151138, AV685436, AI950892, AI500662, AV681721, AI247193, BF812937, AL514493, BE839731, BF339322, AL120254, AI950664, BE909150, BF822127, AI345608, AI800370, BF983610, BE875407, AV757455, AV722452, BF970162, AA651819, BG260087, AI091468,

					<p> AW935969, AI536685, BC001057.1, AF049891.1, AL136623.1, AJ006198.1, AF061254.1, Z95115.1, AC007429.1, AL35379.5, BC007199.1, BC006412.1, AF143723.1, AL162004.1, AF217982.1, AK026480.1, BC002631.1, BC008488.1, AL133640.1, BC008025.1, AL050149.1, AL133093.1, AL110196.1, AB056809.1, AK026649.1, BC001418.2, AL359622.1, AL136622.1, BC004905.1, AK024538.1, AL137555.1, AF227198.1, Z37987.1, BC003687.1, BC008387.1, AK024974.1, AL117435.1, BC007346.1, AK000718.1, AK026522.1, AF225424.1, AF125949.1, S78214.1, AL049938.1, AK026528.1, AL050024.1, BC001967.1, AL512733.1, AB056420.1, BC003682.1, AL137529.1, AK026592.1, AL049300.1, AK000618.1, AB048974.1, AC006313.1, AL050277.1, AB051158.1, BC006480.1, AB055374.1, AB047801.1, AB055315.1, AL050116.1, AF260566.1, U80742.1, AL389935.1, X72889.1, AB019565.1, AB048953.1, BC005931.1, AJ242859.1, AL133075.1, AK000310.1, AK025254.1, AL162085.1, AL080057.1, BC002481.1, BC006195.1, AL389939.1, AK026086.1, AL137557.1, AB063070.1, AL353957.1, AB063046.1, U55017.1, AF219137.1, AL512719.1, S77771.1, AK000197.1, AF057300.1, AF057299.1, AL137267.1, AL110199.1, AK026534.1, AB055361.1, AK025391.1, AL031984.13, BC000066.1, AL136787.1, Y16645.1, AL390154.1, AL117626.1, AB060908.1, AL162006.1, AL080234.1, BC006525.1, AL442072.1, AL512765.1, AL137527.1, AL122121.1, BC006807.1, X66417.1, Y10080.1, AK026550.1, AL049283.1, AL137478.1, BC008899.1, BC001328.1, AL136786.1, BC002485.1, AK025339.1, BC006103.1, AK026959.1, AL122111.1, AK025092.1, BC001963.1, BC004958.1, AL117649.1, BC000317.1, BC000714.1, BC007998.1, AL023657.1, AK025708.1, AL080156.1, AL110225.1, AK024546.1, AF055917.1, AF205073.1, AL080060.1, AL117648.1, AL137283.1, BC008284.1, AK026642.1, AB063008.1, AK026741.1, AK000212.1, AK027146.1, BC007517.1, AK027160.1, AB055368.1, AL136893.1, AF061795.1, AL117457.1, AF151685.1, AL157431.1, AL133606.1, AL389982.1, AK027868.1, BC002733.1, BC001795.1, AF111112.1, AK026865.1, AK024524.1, AF026030.1, BC008781.1, AB060826.1, AK026353.1, AB060893.1, AL442083.1, AK025414.1, AK027164.1, AB048975.1, AL117460.1, AK025435.1, AB060852.1, AL136768.1, AL050143.1, AB063100.1, AL133113.1, AL136892.1, AL080129.1, AL137480.1, AL080124.1, BC001191.1, AL122110.1, BC008382.1, AL133054.1, AK027113.1, BC002752.1, AK024550.1, BC007255.1, AK026744.1, AB060863.1, AB063074.1, AB055328.1, BC001964.1, AL080158.1, AL137281.1, BC002342.1, AF090896.1, AL049276.1, BC008417.1, AF104032.1, AL133665.1, AL136540.1, BC001082.1, BC007021.1, BC003619.1, BC002643.1, AL049382.1, AL136844.1, AK025209.1, AL137648.1, BC001349.1, AB055366.1, AL049466.1, AK026927.1, AK026434.1, AL050146.1, AL117394.1, AK026855.1, AK025383.1, AK026532.1, BC008365.1, AL049464.1, BC006210.1, BC005858.1, BC002839.1, AK026164.1, AY026527.1, AL049314.1, AL110197.1, AK026762.1, U68233.1, BC002523.1, BC008506.1, AK027188.1, AF262032.1, AL133016.1, AL136864.1, AL137273.1, AL136925.1, AK026526.1, S76508.1, AL136749.1, AK025410.1, BC004926.1, AK024570.1, S61953.1, AK026624.1, AB049892.1. </p>
HDPFY18	93	779450	1 - 2173	15 - 2187	<p> AW792967, R41077, BF921165, AV750453, AA729108, AA715505, AW975570, AA714451, BF826980, </p>

HDPIE44	94	899328	1 - 4101	15 - 4115	AW999989. AL528314, AU130887, BE780963, BF966718, AL118570, BE739397, AU126476, AU139315, BF512830, BG115027, BE880693, AI908306, BF791388, BF035925, BF540985, AU122664, AV724420, AI672418, BF665031, BF057158, BF206660, BG120429, BE738855, BF129883, AW959181, BF106186, BF966523, BF213412, AI042351, BF211302, AL042137, BF515714, BF206917, BF031857, BF131974, BF129874, BE514139, AV696443, BF037314, AV661523, AW130577, AA424461, AW130565, AA902916, AU127429, BF677116, AU150429, BF665735, AA983275, AI239435, BE155330, AV705068, BF212900, AV710135, BF432386, BF057834, BF211687, AA461260, AA312396, AI627321, AI160503, N63373, BE502195, AV751301, AI884925, BE468064, BF513143, AV750990, AA186321, BF184200, BE559625, AA749086, AW025721, AU152756, AI418879, AA402517, N26419, AA088855, AI042350, BE268734, AI761107, AI819134, AA678020, AU150014, AI113363, AW341372, BF184441, AI457727, AA649198, BE674349, AA88970, AA580858, AA199866, BE270920, AV649723, H24854, AA100701, AW025691, BE836719, BG010680, BE550985, BE087003, AA326555, R77878, AA424417, AA188173, AL044709, H05951, BF792719, BF930036, N56631, N41679, BF923482, H45855, AI218982, AW779309, AV751002, BE089649, C17343, BF081703, R81295, AA502426, BE646243, BE931964, AW594429, BE676875, R11716, BF748564, H06000, AA460953, BE832883, AV703744, AI265945, AV751157, BE720186, AW021533, T09412, BF849176, AA088766, AA437111, AA336899, BE262777, AA358792, BE155518, H99315, BG166471, BE270762, BE313275, BF239379, AA888732, BE825194, T89695, D78877, AI269641, BG011279, AI469067, AW874055, AW338714, AW874611, N88500, BF445639, AW058314, BE677169, AW139207, R17691, T31819, AW513547, AW472793, AA358708, AV660383, AI765491, AI582998, AI084965, AA598573, AV750235, AA730781, R44452, D61165, AA716555, AA056000, AA322246, R08530, AA333655, BE972774, BE169279, AI870585, BE615699, AI870612, BE169269, AI678506, AI640581, AA648833, R08529, BE383572, BE247425, BF155632, R19666, AW993917, D62489, BG028138, AL040103, AA360932, AI763357, AI652881, BF088332, BE327501, AL528313, AA055971, AV749018, AV748843, AA088700, AI570710, AA004833, AI685231, AA178900, AI886543, BE812475, AW166705, BE812487, T89515, AA347000, D60417, BE937678, AW054783, BE812457, T48558, AA953749, AI199099, AI769397, AI369907, AA199752, BE701083, BF914380, BF508221, BE838996, BE707763, AV646433, BE819207, AV651409, T25765, AA113444, AB018353.1, AK022816.1, AK025737.1, AF202724.1, AK022469.1, AF064854.1, AL133074.1, AA188877.
HDPIU94	95	813352	1 - 2182	15 - 2196	AU140297, AL529544, AL529545, AU124978, AI740820, AU116885, AU126162, AW960772, AI565169, BF111956, BG251247, BG177689, BE780814, AI628285, AA482031, BE784432, AA947029, AW954823, AW190175, AA315300, AU143854, AA707674, AI332610, N50136, AU148736, AU127152, AW768480, BF947113, AA223261, AW9555931, AI276839, AA189165, AA804584, AA767472, AA223378, AA894857, AA252718, R46372, AA939277, N59367, AA219127, AA774827, AV762911, BE546354, N72682, AA219510, AV761697, AA872005, AW188325, W02461, R21326, AI923716, D29223, R68368, BF771937, BE769443, AA322537, R08745, AA417592, R08746, AW952240,

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HDPOL37	96	745377	1 - 1475	15 - 1489	BF982675, BG257755, BE745491, AI521447, N24987, W85947, R25481, AV711665, Z42066, AI697574, AW856800, T07905, AC009475.4, AC019086. 7.
HDPOO76	97	838594	1 - 631	15 - 645	AI631291, AL514675, BF446962, AI952912, AI082051, AI927718, AI817234, AW245405, AW575213, AI685485, AW574689, AI888313, AI928811, AA633918, AL536751, AW162001, AI521576, AI679267, AA603095, AW248663, AI671689, AI924805, AW169272, AW054977, AI684117, AI832595, AI922601, AW157761, AW075901, AI889359, AA669133, AA703928, AI758895, AI571907, AA669154, AI859391, AA554494, AI862750, AW574888, AW584019, AA633909, AA808156, AI355530, AI554282, AA809056, AI815905, AI983159, AI354570, AI819952, AW151518, AI084731, AI057539, AW081146, AI625578, AI924682, AI813754, AL048086, AI499158, AL037721, AA419273, AI700129, AL047695, AA553789, AI573001, AA528248, AI445750, AL533609, AI829209, AA526860, AI613217, AW474840, AA554506, AW069560, AI431443, AA570449, AI951113, AI951467, AW003625, AL534624, AW069492, AW673253, AI446757, AA554747, AV752260, AI357759, AI963287, AI754386, AW069472, AW190719, AI366924, AI985885, AI581145, AI888058, AI446317, AA707441, AW513126, AI755259, AA857824, AI818937, N53460, AI830983, AI683296, AI979226, AI499271, AI754716, AI754656, AI473621, AW068917, AI469380, AI572562, AW069143, AA528145, AI133425, AL514933, AL515938, AA856795, AI439870, AA837512, AW069647, AI753065, BF727130, AI499184, AW069215, AI114467, AI590989, AA843416, BE301245, AI709159, AA641263, AW081870,

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HDPPD93	98	637588	1 - 687	15 - 701	AI767544, BF963878, AW391604, AW371053, AW391605, AW380560, BE150935, AW380557, AW609397, AV647627, AW609527, AV647628, BE150882, AA625481, AV647780, AW582425, AW582423, AA053357, Z39028, T31703, AI559952, AI962812, AW023035, AW247321, AW594578, AW204377, AW135110, AW069029, AA737065, R51075, AW294433, AW291912, BF511819, AW292027, AI265783, BF063801, AI274716, AI191509, AA605269, AI768872, BF057534, AI634812, AI698531, AA565825, AI275563, AI366661, BE242780, AI538787, AI203337, AI565080, AW008059, AW088320, AW073352, W73510, AW242351, AI341846, BF222967, AA513453, AI346467, AA622940, AI000935, AA535424, AI022694, BF592958, AA639759, AI679288, AI679864, AI079193, AU147451, N56986, AU148991, AI304785, AA134162, AW664542, AI337342, AI245649, AI969305, AW582354, AI081970, AI262353, AL079933, AW976197, AI991639, BF349821, AU159502, AW004865, AA665733, AI348128, AI094163, AI184073, AU152120, AU149126, AI359191, BE552234, AA632288, AA814449, AW362622, AU159545, N75380, N49596, BF869959, H48051, N70679, BF987335, AI864296, AA928727, BE963530, AA617935, AI151119, BF680667, AW978110, BE785995, BF913501, AL519088, H56669, BF526020, AI668893, AV655645, AV714752, AW087445, AW104724, AI538716, AL045500, AI564719, AI802542, BG058398, AW026882, BG031815, AI433157, BG179993, BF812961, AI620284, AI524671, AI857296, AI619502, AW118557, AI682841, AI439745, AI934035, AL514129, AL036274, AL036361, BG111590, AI560099, BE048071, BG260037, AI445432, AL036802, BG257535, AV732936, BF970449, BF812938, BG110517, AA640779, AI536685, AI445025, BG180996, AL514983, AL121365, AI521012, AI537677, BE884130, AI475371, BG112718, BG113299, AI702406, BG110684,



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HDPWP82	99	778405	1 - 538	15 - 552	AW971745, BE613349, BE612945, BE622828, BE613070, BE613136, BE614230, BE614307, BE614237, BE621911, BE622925, BE622931, BE622868, BE618811, BE620742, BE614451, BE620756, AV645401, AV645332, AV645383, AV645377, AV645379, AV645385, AV645389, AV645369, AV645380, AV645321, AV681527, AV645390, AV681501, AV645400, AV645392, AV645393, AV645404, AV645353, AV681458, AV681492, AV645358, AV681500, AV681509, AV681529, AV645334, AV681510, AV681528, AV681474, AV681514, AV645339, AV681477, AV681512, AV681471, AV681491, AV681526, AV681472, AV645336, AV645317, AV681507, AV681465, AV681525, AV681495, AV681505, AV681502, AV681504, AV681497, AV681486, AV681483, AV681464, AV681462, AV681487, AV681506, AV681523, AV681519, AV681488, AV681475, AV681461, AV681531, AV645343, AV681468, AB026436.1.
HDPXN20	100	801896	1 - 1742	15 - 1756	N21191, AI741932, BE044277, AI629269, AI983731, AI672447, AI857992, AI038996, AI458740, BF195297, AA427920, AI262839, AI765988, W56889, AI887830, BF362406, AA434553, AI356819, AA761182, AI580896, AW471229, AI823446, AI085255, AW194741, AI307821, BE326438, BE773018, AI264066, AI308228, AA767407, AI091515, AA041413, AI378900, AI304782, W96055, AW503114, N27464, AW083746, AA649056, BF056407, N25472, N35407, H97047, AI467835, N30427, N33490, AA041373, AA772673, AW002681, AI823937, AI862591, H44561, AA889405, BF359827, AI085858, H96914, AA706666, H42751, N36137, W96056, AA843336, H38964, H44562, H42715, N29396, AA694566, N41456, BF362424, AW504612, AA743367, BF362433, AA872539, AA846429, N20120, N24547, N48040, BF362395, N59329, AA889895, AA370649, AW954030, AA889404, AA737038, W40480, AA890575, N43881.
HDTAU35	101	838139	1 - 363	15 - 377	BE877146, AV725709, AV756682, BE881230, AA469321, AV654282, AV702947, AI064816, AA467922, BE878467, BE876183, AV726503, AV715748, AV705443, AI557222, AV757055, AV724819, AV662257, AV717185, AV727472, AV705433, AV706584, AA467864, AV759547, AV726938, AV721822, AV701879, AV758197, AV707611, AV729255, AV725529, AA533928, AA467872, AA467983, BE874492, AL047841, AV759063, AV738071, BF942332, AV653804, AA467862, AI698669, AV692176, BE877083, AV762317, AV722499, BG222560, BG222322, BE875275, BE880733, AA657843, AW243938, BG231240, BE873792, BE877078, AV721050, AV729339, BE879882, AV691890, BE876813, AV728243, AI951338, AW128905, BE874475, AA468184, AA467920, AV742491, AV759381, AI207666, AV709039, BE878027, AA468250,

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HDTAV54	102	801898	1 - 646	15 - 660	BE905151, BF984756, AW575222, AA857473, AI582212, BF195707, AW170331, AW055239, AI475967, AI453132, BF981150, AW007603, AA861931, AA932031, BG231665, AW058365, AL519544, AI560624, AI207334, AA758563, AI056115, AA291397, AA722047, AW591859, BG005846, AI682698, AI435289, AI832738, AI025441, AA845629, BF972309, AI222778, AW368981, BE042533, BE856175, BE867460, AI802243, AA846837, AI313216, AA947300, AI003316, AI122651, AA947459, AW974228, AA428301, AA878130, BG005841, AI148631, AI002234, AI188813, AW973914, AA947612, AI096605, AI138434, AI494012, BF970403, AI365595, AI720302, AI187258,

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HDTGW48	103	827285	1 - 2247	15 - 2261	N77861, AA446468, AA447582, AW897045, A1767857, BF892068, A1968642, A1363143, BF848630, AL134671, AA430143, AA315922, BE890577, AL119770, AA448081, AA861235, AL138804.16, AB042624.1, AL049634.8, AL109809.18, AL034562.3, Y10376.1, D86043.1, Y10375.1, AB023430.1, Y11047.1, U06701.1, AC004832. 3.
HDTLM18	104	836057	1 - 511	15 - 525	T62863, AL049843. 18.
HE2CH58	105	838140	1 - 795	15 - 809	BE748872, AW072415, BF431026, A1700497, AW304733, A1077574, AA923280, A1567916, AV757311, BF108517, AA224592, H54698, AW798753, BF893408, A1671211, BE552302, A1097097, AW976608, TS9834, AW339710, N33473, BG113188, BE910373, AV733397, BE876029, AL514879, AV760225, AL514793, AL513907, AV702117, AW6773679, A1889306, A1590227, AL079963, BF970652, A1698391, BE965621, BE543089, A1537677, AW074172, AV712672, BF812938, A1433157, A1702073, BF814412, BF812961, AL036403, AV702147, AV706624, A1633125, A1627988, A1815232, BF032768, AV727238, A1815855, AV723772, AV753074, A1677796, AL513755, BF856052, BF924869, AV729940, BF812960, BF725644, AL514791, AL048656, A1923989, AV702994, A1439256, BE885353, A1536685, BE393551, BG029667, BF338002, AL514359, AL045500, A1521560, A1249497, A1567883, BF968558, BE964614, AW827289, BE789764, AL514129, AV650024, AV647670, BF814453, AV716471, AV756026, BE047852, BE965121, AV647773, A1889189, BG121959, AV708834, AL036361, BE018334, AL513693, AW026882, A1491775, AW087445, AV647121, BG163618,

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HE2PO93	106	771655	1 - 1309	15 - 1323	<p>BG250792, BF340156, BF691370, BE958544, AI913576, BE892390, BE467084, AI769974, BF978990, AI985726, AI978876, AA805536, BG114463, BF976892, AI879646, AI640283, BF212660, BE813503, BF212750, BE245388, AI151263, BE813657, AW994769, AI474103, BF326782, AW078667, N66384, BF382578, BE881936, AI268780, AA137260, BE865738, AW118966, AI690850, BF211945, AA150376, AW020353, AI218961, AI458422, AI758351, BF030723, AA631892, AI350813, AW079202, AI038862, AA150275, BF082705, BF240677, AA912346, T17277, BE003683, BE813513, AW468933, AI003046, BE048238, AA137259, AI208534, BE770261, R77850, AW955572, BF743116, AW183342, AL047998, AA928199, AI282290, AL047999, R77760, BF215622, AI21406, T34660, H60032, BF336987, AA362660, AA330116, Z40410, AW370452, AI473113, AA306043, AA343807, BF239599, AA621093, BF240906, BF887439, BF886985, R40472, N52225, AW168049, AA789087, BE770101, BF885967, AL534441, AA962715, BF212646, N73192, BE871372, BE715872, AC009709.7, AC007911. 8.</p>
HE6AU52	107	562782	1 - 831	15 - 845	<p>AV755215, BF824908, AV757088, BF131961, AV756554, AV702854, AI950092, AV757752, AW134795, AA181890, BE968824, BF030662, AV723324, BF592559, AA076491, BE710615, BE172131, AV722114, BE867615, BF695678, AV726849, BF676359, AL036773, BE172128, BF131261, AV704987, BE677135, AI862573, BE875610, AV702869, AW857491, BF576860, AW857509, AL159990.12, AC073308.4, AB050152.1, AB050154.1, AB050155.1, AB050153.1, V00710.1, X62996.1, D38114.1, X93347.1, AB055387.1, AF346993.1, D38112.1, AF347007.1, AF346998.1, AF347001.1, AF346999.1, AF347011.1, AF346987.1, AF346996.1, AF347013.1, AF346967.1, AF346968.1, AF346969.1, AF346971.1, AF346975.1, AF346985.1, AF346986.1, AF346997.1, AF347009.1, AF347012.1, AF347014.1, AF346989.1, AF346995.1, AF347006.1, J01415.1, V00662.1, AF346963.1, AF346966.1, AF346977.1, AF346978.1, AF346979.1, AF346982.1, AF346983.1, AF346988.1, AF346990.1, AF346994.1, AF347000.1, AF347008.1, X93334.1, AF346970.1, AF346972.1, AF346973.1, AF346976.1, AF346980.1, AF346981.1, AF346984.1, AF346991.1, AF347003.1, AF347010.1, AF346974.1, AF346992.1, AF347015.1, AF347002.1, AF347004.1, AF347005.1, AF346964.1,</p>

					AF346965.1, AY012136.1, AB062538.1, AB062542.1, AB050147.1, AB062540.1, AB062541.1, AB062539.1, AB050148.1, AB062536.1, AB062537.1, AB062532.1, AB062533.1, AB062535.1, AB050149.1, AB062531.1, AB062530.1, AB050150.1, AB050151.1, AB062529.1, AB062522.1, AB062527.1, AB062528.1, AB062513.1, AB062514.1, AB062515.1, AB062516.1, AB062520.1, AB062521.1, AB062523.1, AB062525.1, AB062526.1, D38113.1, X93335.1, D38116. 1.
HE6CS65	108	762960	1 - 1512	15 - 1526	BG114804, AV718161, BG115294, BG163956, AW362005, AW579708, AA425593, AV732860, AA778426, AW367244, AL537244, AW856936, BF377273, BE675130, BG119784, BF978611, AA194252, AI937228, AW292921, AI222740, BF349929, AW856088, AI348188, AW665835, AA025880, BF333804, AW005582, AI139606, AI126585, AW959277, AI417243, AI339985, AI972128, W52543, AA829354, BF333819, AI078819, AV752850, AW857034, BE789386, AI299395, AW675446, AI083537, AW516855, AA035526, AW005637, AA932845, AI088259, AI492529, BF375157, AI334135, AI682947, AI753237, AI923621, AA425629, BF804458, AI628857, AI635633, AI085676, AI580195, AI138968, BE350523, AA005425, BF333807, AW102884, W52544, AI022376, W39677, AI920867, BF333811, AI240384, N49885, AA227905, AI087384, AI302240, AI933336, AI670129, N98508, AI268859, AA232843, AI221780, AA253379, N71409, AA004925, BF761279, AI066394, BF811217, AI302764, AA311893, AW571609, AI080166, AI299456, AA844294, AI342664, AI147714, AA464423, T60255, BF807121, AA765193, H29427, AA876118, AW265722, AI074827, AA808646, AA193122, H43349, AA233282, AI693779, AI245406, R60024, AA005426, AA995705, AW302271, AA934521, AI061151, AW366962, H38317, T90537, AI445689, W44818, H12893, AI446122, AA253378, H78422, AW378644, AI753445, R44689, N99734, AW102871, AA719170, AA464422, AA974340, H78222, AA934622, AW149309, R68103, AW265649, H40537, AA807276, H43181, AI277059, T34512, AA430350, BE539364, AI076849, AA347001, T81330, BE049268, H26609, AW589372, BG231066, AI092386, R24873, R43362, Z40090, AA334085, AW378680, N31595, H58243, R68147, AA257048, AA004926, H12894, AA886683, BF593823, F02035, AI559907, AW062917, N49990, H43311, AA295950, AI364249, R52133, BF748425, BF804455, AA778257, AW379516, T81506, AI080028, AA347002, BF377711, T83072, AL134712, H26654, BE082628, BF131565, AA227588, BF092102, BE774491, BF092109, AI382725, W63710, BF807108, F01928, BF858654, W31073, AA169731, AW367337, AA936648, AA193460, AW378675, H43212, BE082824, BF858661, AW864790, AA946635, T61637, AA304629, R17644, BE047631, AI867081, T24808, AA293625, R52222, AW890658, AA425423, BF929843, BE888442, C02346, Z99943.1, AK024700. 1.
HE6DO92	109	562767	1 - 927	15 - 941	AI654705, AI364854, AC007276.3, AL117337.25, AF205588.1, AC007353.4, AC009533.9, M32788. 1.
HE6EY13	110	847058	1 - 853	15 - 867	AL530721, AL519666, AL514911, AI923443, AL535119, AL535118, AI634953, AA430386, AW517144, BE616833, AL527421, AW517152, BE531183, AI097033, AL535616, AI127186, AA652668, BF338122, BE279508, AI143875, BE733522, AI950068, BE884261, BE885582, AI936768, BF967004, BE791841, BE548506, AA746044, AA489517, BE562991, AI074208, AI934851, W30776, AW996278, AI160804, AI744978, AA427865, H45798, AA935040, BE538131, AA832261, AA806434, BG028236, AA284883, AI817348, AA873636, AW162266, AI929800, AW172820, AI380091,

HE8BQ49	111	589443	1 - 1861	15 - 1875	AA708347, AI815068, AI024256, AA612964, AW770463, AI278531, BE349544, BE674988, AI635843, AW513137, AW673233, AI816986, BE328782, BG028440, AA680312, AA825323, BF589632, AW003379, AA039332, AW071157, AW770382, AA588835, AI346987, BG056404, AW152092, AA041377, BE350556, AA287368, AA653509, AA477128, AI367990, BE465583, BF448228, BF115287, AW044578, AA126677, AA464570, AA436429, AI808213, BE855808, AI720049, AA931271, AA659795, W74217, AW328731, AA476577, BE328785, AW383962, BE182231, R37644, BE787814, AV721687, BF094301, AW470212, AA287506, AI200308, AI364059, N32773, R89303, AA832337, AW471418, AW513522, AA954681, AA838218, AI241959, AW664499, AA868075, BF448848, R81187, AI356580, AA489518, AA129242, H78214, AL519667, AI016411, R53087, AA081185, BF526124, AI383729, W42678, H72970, R82993, BF316834, AA368569, BE743124, AI279385, BG166378, AW190970, R48835, AA411549, AL530722, AI219019, R53178, AW966111, BF445577, AA081295, R24417, R24418, W31318, AI538499, AW996589, T58548, H78414, T58603, AI445933, AI016436, AA129279, W15647, AA284614, AI091508, BG011177, AI379130, AI932650, T51003, AI471390, AA291664, N41774, AV687942, BG235946, AA085871, BE925426, AA041417, AW328667, AI623391, N78993, AI583034, AA843275, W52667, F25719, AA429288, BE301645, BE834416, AL514912, BE174918, BE968515, H59109, R48834, F35772, AA586340, AW578658, AI343882, T51093, AA477374, C01852, AA405255, T50155, BF514095, BE834467, AW796725, H59149, R87518, R81293, AA284321, W52668, R27171, AA079066, AI075102, T85430, BF920577, N84553, BE018163, BE720127, BF337914, AW009389, AW196302, AA749379, AI343898, N92435, C05210, AA448899, AA975241, BE926998, C05561, AA352634, F20646, AI185675, AA290807, N94429, AW301144, RI3786, AA421159, BE834085, AW291918, BF365442, AW591712, AA592907, T83974, AI420624, AI074236, AA761016, AA514243, AA557505, AA678902, AA464673, AA483524, AA568565, AW516923, AA385487, AJ011916.1, AC003688.1, BC009295.1, AC020893. 5.
HE8SG96	112	862016	1 - 2022	15 - 2036	W35257, AC009225.3, U49973.1, AF036938.1, AL445225.9, AC006142.1, AC006077.1, AC008670.4, Z74739.1, AL023755.5, AC008780.6, AL445212.9, AL356317.8, AL137244.28, AJ271735.1, U70984.1, AF241734.1, AC021506.5, AL391868.15, AL162386.17, AC009312. 4.
					AV763026, AV763058, AW964231, AI732710, AI732677, AI669589, AW327624, AI061313, AA410788, AA829036, AA502991, AV759632, AW328331, AW973992, BF804385, BF526964, AW069227, AW873261, AA831426, AL039042, AW974932, AV729929, T11828, BE301584, AW576490, T74524, BE138594, AI090377, AW500684, AI821608, AI284543, BG222813, AI244127, H73550, AI755214, AI345695, AI284126, AA535216, AI275982, AI380617, AW237905, AI491765, AU147162, AI754105, AA831638, AI754567, AW026305, BE062478, AI421950, T05118, AI419337, AI755057, AI223626, AI912401, AW516255, AI753672, AI612142, AI056177, R64617, AA683279, AI609972, BF821897, AW576251, BF681619, BF868994, AI361090, AL041706, AW969941, AU159116, AW833047, AI186438, BE062476, AI826761, AW504224, AI254770, BF821009, AA828047, AI049955, AL079734, AW270771, AW468009, AA177011, BE328291, AI251034, BE139139, AI653515, BG223550, BF854308, AK025806.1, AL138707.10, AL138784.30, AC002350.1,



HE9CY05	113	834826	1 - 1033	15 - 1047	<p>AC004166.12, AE006639.1, AC004878.2, AC005071.2, AC004867.5, AP001724.1, AP000688.1, AL034417.14, AL031708.3, AC005098.2, AC007327.1, AC016543.6, AC012596.4, AC004000.1, AC005952.1, AL117341.26, AC005796.1, AC005488.2, AC006014.2, AL031904.1, AJ400877.1, AC022436.5, AP001873.3, AC025594.5, AL161658.21, AC008394.3, AC005246.1, AL158828.14, AC007003.4, AF168787.1, AL031228.1, AL136228.8, AL121834.20, AC090051.8, AL139092.12, AC005529.7, AC005047.3, AC021396.6, AL390738.4, AL391122.9, AC010363.6, AC068799.14, AL035464.20, AC006449.19, AL121753.30, AC004778.1, AP001432.1, AL121901.20, AL391136.9, AP00010.2, AP000151.1, AL022324.1, AC091529.1, AL139415.10, U91320.1, L44140.1, AB038653.1, AL049776.3, AL136123.19, AC008701.5, AL136083.7, AC010412.7, AC022509.21, AL022320.23, AL138756.23, AC005565.1, AL353710.7, AC009961.11, AL121886.22, AL359091.10, AP001068.1, AL023577.1, AL354808.24, AL121653.2, AP000500.1, AC004491.1, AL137141.10, AL078461.38, AL009181.1, AC011450.4, AL138762.20, AF111167.2, AC011460.3, AL137229.4, AC018712.5, AC009477.4, AP001728.1, AC010543.8, AL022318.2, AC005821.1, AC012309.7, AP001714.1, AC009731.6, AB026899.1, AJ011930.1, AL163300.2, AL161781.12, AL354720.14, AL133240.3, AL353802.14, AC074013.5, AC007000.2, AL049795.20, AC079347.6, AC011548.4, AF107045.1, AL031659.9, AP001725.1, AC087590.1, Z68226.1, AL513008.14, AC020904.6, AL033528.19, AC002326.1, AP001469.1, AC004785.1, AL162464.5, Z77249.1, AC069080.12, AP000687.2, AL512590.2, AL133545.10, AC025457.5, AL357712.10, AL121652.2, AL033381.2, AC006023.2, AC009481.4, AP000008.1, AC006312.8, AC023344.4, AC006236.1, AC010358.5, AC004812.1, AC004824.3, AL049565.3, AL133383.10, AL356481.16, AC009996.7, AL391839.9, L47234.1, AL162274.17, AP002982.2, AC004882.2, AC008055.6, AL031727.42, AL117334.29, AC010203.13, AL132780.5, AC007687.16, AC004622.1, Z93023.1, AL118524.25, AL355916.2, AC007404.4, AL079335.29, AC005387.1, AC011449.6, AC005225.2, AC019206.4, AL021977.10, AC011239.5, AL137878.11, AL161899.21, AL158214.33, AL591807.1, AL391221.15, AC006435.7, Z67997.1, AL133507.8, AC005914.1, AC008507.8, AC012476.8, AC008651.7, AC005386.1, Z93244.1, AC010465.7, AL137059.20, AC003969.1, AL117692.5, AL365445.11, AL136039.4, AP001727.1, AC004134.1, AC010598.6, AC006329.5, AL049569.13, AL137061.12, AC010473.5, AC018738.4, AL031428.9, AL109749.22, AC005200.1, AL133260.12, AC004098.1, AC008536.6, AC007277.2, AP000811.4, AL136159.11, AL033543.6, AL158166.12, AC009244.24, AC006057.5, Z81007.1, AC090955.2, AL121992.24, AF274856.2, AC008635.6, AL009031.1, AC004089.25, AC006139.1, AL135787.13, AL133485.3, AC007739.2, AL035587.5, AC011479.6, AL159168.15, AC006480.3, AL139289.6, AP001748.1, AL139396.17, AL161793.9, AC006277.1, AL354760.11, AB014078.1, AC004594.1, AC004976.1, AC012442.7, AL391595.14, AL512347.14, AC011471.6, AC008753.8, Z97985.16, AF283320.1, AP000704.2, AC010320.9, AL135839.15, AC090954.1, U95742.1, AC009248.6, AC018648. 5.</p>
HE9CY05	113	834826	1 - 1033	15 - 1047	<p>N76568, N54458, H74303, H74302, H73373, R02548, H40263, H58326, A1242058, H58715, H73374, R02666, A1438986, T80187, AA676653, A1022453, T87491, N86939, N88474.</p>

HE9GG20	114	633719	1 - 662	15 - 676	AA702942, AA017500, AI590400, AI863074, BF208968, N53688, R50964, H29619, AA053400, M79184, R49619, R07891, R11225, D58339, AA022600, AA704234, H44497, BE567097, BE567104, N54769, AW949478, AV726590, AW958620, AV708961, AV724987, AW953773, AV727381, AW963671, AV702725, AV706223, AV707863, AV703062, AW967188, AV728965, AV706183, AV651920, AV727822, AW959830, AV707786, AV698290, AV702738, AV705445, AV705437, AV702798, AV704847, AW957653, AW954439, AV660258, AV725618, AV726505, AW962133, AV707663, AW964223, AV706279, AW950443, AV697880, AV648364, AW952403, AV726619, AW952751, AV701183, AW956075, AV645936, AW954209, AV709587, AW959858, AV705635, AV692600, AV650315, AV659389, AV727613, AV725033, AV706527, AW964421, AV727787, AV659294, AV725745, AV686060, AW631469, AV660608, AV728148, AV726831, AW950411, AV709314, AV653353, AV727377, AW954697, AV691080, AV702385, AW949802, AV652001, AV707979, AV709580, AV727003, AV707652, AV708786, AV659547, AV727526, AV728546, AV725577, AV728924, AV725617, AW956474, AV704124, AV699089, AV705135, AV701874, AV703501, AV704785, AW952042, AV707401, AV709660, AV709935, AV654035, AV707654, AV704042, AV654282, AV729220, AV697288, AV694836, AV706882, AV697498, AV727314, AV702954, AV727238, AV686420, AV682997, AV696866, AV727126, AV728652, AV655890, AV728997, AV706162, AV686390, AV656256, AV686417, AV698429, AV656240, AV655577, AV692972, AV694871, AV727459, AV695545, AV703762, AV656283, AV656224, AV694674, AV708025, AV684604, AV729378, AV708980, AV692691, AV729131, AV645545, AV706671, AV649758, AV728270, AV709256, AV727103, AV693523, AV706532, AV701496, AV707730, AV727807, AV705811, AV704592, AV703456, AV727032, AV728642, AV701538, AV727029, AV725001, AV702869, AV725380, AV707510, AV727221, AV725956, AV728471, AV726694, AV728985, AV708438, AV702861, AV725134, AV702721, AV728436, AW945153, AW959312, AV703669, AV702794, AW951768, AV654070, AV650430, AV703437, AV702558, AV703620, AV704585, AV651075, AV729077, AV659189, AW960601, AW957068, AW954032, AV651317, AW960779, AW949398, AW952183, AW959806, AV656903, AV697196, AV707656, AV684762, AV656250, AV726091, AV703034, AV707830, AV655280, AW951239, AV659322, AV654908, AV656478, AV698545, AW952885, AV708381, AV660728, AV646808, AV726194, AV703169, AV728715, AV728518, AV728360, AV727912, AV702109, AV696931, AV647789, AV729159, AW966044, U94592.1, Z30183. 1.
HEAAW94	115	847340	1 - 910	15 - 924	AA578368, AA492135, BE707438, AI880112, AA927112, AW970866, AA368674, AW237957, BE560582, BE560540, BE268041, BE513979, BE398109, AI525375, BE270770, AF191611.1, AF043045.1, AF042166. 1.
HEBCI18	116	831464	1 - 1107	15 - 1121	BG163565, AA176798, AW978791, BE551966, AA836133, AW469431, AL134496, AI919296, AA039788, AA039787, AW188317, AI198382, AI302883, AI057154, AW504498, R82599, R87540, AW873029, AW471211, AA912833, BF909811, AI589744, F09143, F10741, R82600, AA984619, T75424, BE328429, R39278, AW517852, BE929822, R88273, R87938, BE929796, AA583730,

HEBDF77	117	692347	1 - 1806	15 - 1820	<p>AW088089, AW169811, BF812441, F13138, F11483, AW008583, BE934536, T94778, AW135926, AW082922, R87937, T63400, T94026, N26157, A1432002, T63545, A1687331, AA983955, AB014522. 1.</p> <p>BE550371, AA991780, BE671948, BE672217, A1907477, BF591700, BE504304, BE2220403, BE222339, A1281980, A1015798, BG149662, H29013, R88622, A1656870, H06705, R39800, F07755, Z40840, C15636, C15624, AA133829, H29114, H06754, F06113, T15386, D81469, BE503273, BF062276, BE041662, BE041633, F06114, F02370, A1363908, AW148827, N46729, AA663853, BG149723, BE699475, BG105603, R12748, AL039029, BE699467, BF946316, AB023144.2, AL078460. 6.</p> <p>AW964157, A1564075, AA167586, AW204637, R85100, AA824367, Z45398, AA324333, AA332411, AW341163, T81885, BG055317, AA378561, T05032, BE218722, Z41111, T71210, AV705201, AV703158, AW953763, AC008623. 4.</p> <p>BF339246, AW957665, BG258103, AW075995, BF309372, BE868083, AW576203, BF308177, BE881903, BF689190, A1051657, AA311371, BG059809, W56301, AW058408, AA102223, BE301190, A1091799, R05745, D61582, R01123, AA102222, AA375163, BG029189, AW293550, A1752483, AA376452, AW275432, BF812696, A1439525, AW151541, AW084324, A121039, AW265468, A1702049, AW162314, AW327673, AA577706, BE273825, BF940118, A1270280, AW148821, AW162332, AA807704, BG059139, AA661583, AW238137, AA601674, BG180320, AV742390, BE244308, AW410844, A1433952, A1828721, AA631915, AL079734, BG152746, AW473160, AW021399, AW020094, BE677164, AA728954, A1860423, A1039257, BF679568, AW243817, A1049999, AW148964, A1538404, A1826857, A1753131, A1690379, BE676856, A1003469, AV758870, BF214695, AW502688, AW631267, A1904840, AA603359, A1251696, A1819419, A1090377, A1254508, BE176819, A1554399, AA112864, A1355246, AW151848, AW962971, A1028148, A1308529, BF868826, BF970107, AA507499, A1751698, AL036896, AC006483.3, BC000787.1, AK024787.1, AC010616.5, AK027150.1, AC004659.1, AL078611.1, AK000385.1, AC005519.3, AC009756.9, AC002543.1, AC005052.2, AL354836.13, AC016995.4, AL023879.1, AC003108.1, AL139824.22, AL121675.36, AL358777.12, AC015651.18, AC011444.5, AC004966.2, AC011526.7, AC010319.7, AL121579.4, AL158040.13, AC007421.12, AC005531.1, AL391259.15, AL096701.14, AC002996.1, AC067945.4, AL109923.29, Z97183.1, AL133458.19, AC010271.6, AF279660.2, AL035086.12, AP00280.2, AL445184.11, AC008440.8, AC008848.7, AL139809.16, AC018663.3, AP000039.1, AP000107.1, AF195658.1, AP000557.2, AC004974.1, AC010789.9, AC004552.1, AC004985.2, AL160256.21, AC018633.2, AL121897.32, AC090944.1, AC020983.7, AP001715.1, AC007374.6, AL117382.28, AF207550.1, AC010422.7, AL137852.15, AC008635.6, AL035659.22, AP000463.2, AB017653.1, AL359236.4, AC005358.1, AL035683.9, AL139785.5, AL159168.15, AC000353.27, AC000379.1, L35532.1, AL357972.18, AC011479.6, AL159990.12, AL138849.12, AC008891.7, AP000555.1, AC010530.7, AC008744.6, AC025212.5, AL451162.14, AF167081.1, AC007240.2, AC003007.1, AL512489.11, AC004673.1, AC004752.1, AL138733.15, AL354948.7, AC011740.7, Z85986.1, AC005484.2, AC013355.7, AC016596.5, AL031711.30, U73636.1, AC006064.9, U91327.1,</p>
HEBDQ91	118	840288	1 - 1559	15 - 1573	
HEBFR46	119	847064	1 - 1290	15 - 1304	

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HEBGE07	120	798096	1 - 1853	15 - 1867	
HELAT35	121	693175	1 - 2154	15 - 2168	AW963489, AI355246, AW275432, AW272815, AI521525, AV756663, AW130350, AW962006, BE154381, AA584765, AI479148, BF814446, BG231179, AW963397, AI791659, AW020150, AI590442, AI926102, AI927275, AA525753, AW069227, AW021674, AW265468, AI634187, AI572680, BG180320, BE138520, AA533066, AW270652, AL121039, AI702049, AW270385, AA683069, AV712092, AA595661, AL534817, AW023390, AL041375, AI358928, AI821901, AA719564, AV761486, AW148821, AW897556, F35684, AW302048, AW151247, BG059139, AI973173, BG166270, AA313025, AI797998, AA507623, AW105463, BE073116, AA663579, AA491827, AA535216, AA640305, AA807704, AA493808, AI675615, AI473671, AW970588, AW410844, BE049409, AC016613.6, Z84466.1, AL163204.2, AC005274.1, AL121897.32, AL138743.5, AC008865.3, AL163209.2, AC005666.1, AL359744.17, AC018637.3, AC004552.1, AP001767.4, AL109748.2, Z98751.1, AC027124.4, AC006487.8, AL022336.1, AC012170.6, AF288742.1, AL109925.11, AL035685.21, AC021188.6, AJ009632.2, AC008738.6, AC012499.7, AL355871.5, AC004938.2,

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HELBUS4	122	637624	1 - 1246	15 - 1260	AI057466, R99876, T95815, T95814, R99875, AI560085, BE301584, AA654781, AA653955, AA729282, AA507822, AI583252, AI246796, AI612142, AI753536, BF879045, AW502237, AW080811, T09219, AA525823, AI084223, BE062476, AA225406, AI446561, AA558404, AW963463, BF854308, AW732205, AW410354, AV737160, AL357117.20, AC090958.1, AL109798.19, AC005522.2, AL031291.3, AF229163.1, AC005391.1, AC005726.1, AL050318.13, AL121594.6, AP000032.1, AP000504.1, AC005099.1, AC021016.4, AC011481.4, AC006538.1, AL139326.15, AC008760.6,

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HEMEY47	123	834491	1 - 1600	15 - 1614	BG114430, BF669387, AI186048, AW979184, BF744535, AA873661, AW591309, AW778931, AI049800, AA776535, AI285808, AW770319, H67089, T61820, AI199252, H58923, AA595661, BG011176, AW265468, AI547110, AA180056, R02409, AI570067, AW410844, AA493245, BE156611, AA601376, AA280886, BG180320, AL121039, AI702049, AA600127, AA493546, AA404619, BF880881, AW021674, R61887, BG059139, AA313025, AI174703, AU157188, AI567676, AA629668, AW148821, AA661583, AW243817, AA640305, AW771679, AA935827, AI300608, H62123, AA218684, AW514844, AV712770, AW963552, AI572680, AA729004, AI890297, AW338376, AA171400, AA601290, AA658443, N25287, R92703, AW192930, AA632355, AI754926, AW575808, BF679568, BE891031, AI934664, AI828721, AW157128, AA338474, AA847341, AI538404, AL138262,

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HEOMC46	124	866171	1 - 925	15 - 939	AW026120, BF891831, AL498747, A1056326, A1075298, A1359561, BF901563, BF901553, BF893716, BF894749, BF901561, A1457604, BF891852, BF901564, BF901551, BF893717.
HEPBA14	125	855935	1 - 732	15 - 746	AL042402, BE794572, BE793434, BE902740, BE795223, BE796038, BE795846, BF976282, BE794023, BE792650, A1708767, BE797539, BE727901, BE790876, AV698481, BE797453, AV713476, BE796376, BE790755, BE791092, BE796227, BF308232, BE874660, BE745525, BF342550, BE790687, BF968456, BE791517, BE560745, BE791406, BE274348, BE728347, BF237469, BE796509, AU123246, BE386742, BE260585, BE797101, BE794823, BE731394, BG177271, BE879514, BE793206, BE300171, BE794960, BE879535, BG251054, BF971150, BE731375, BE791337, AU122903, BE891943, BE905832, BE790793, BG121915, A1985637, BF207077, BE790875, BE796976, BF685685, BG254834, AW189945, BF976463, BE791290, BE795983, BF314422, BF976215, BE796201, BG177300, BE796652, BE727488, BE792297, BE740218, BF306538, BE796291, BF034308, BF970622, BF795019, BE879033, BF341355, BE731259, BF792526, BF969593, AL135290, BF310331, BG109289, BF797802, BG036501, A1818928, BE379082, BE792328, BE569043, BG253952, BF970844, BE275264, BE799031, BE559964, BG036177, BF308478, BF312255, BE729229, AU122879, AW168772, BG036306, BE905712, BE889671, BE729432, BF973995, BG171110, BE795417, BE619444, BF304948, BE788776, BF688618, BE795905, A1133074, BE906182, BG165254, BE614863, BF970016, BE884621, AU125886, BE312750, AW439800, BE793690, BE792160, BE793848, BE277286, BG251837, BG109767, BE386257, BE728591, BG168188, BE276302, BE906382, BF315718, BE249941, BG104470, BF974686, BE792892, BG113000, BF980933, BE727244, BE561903, BE791069, AW512287, BE910026, BE796110, BF058295, BG107383, BF312638, BE727304, BE560786, BE559904, BE889607, BE274774, BG164853, BE744048, BE378927, A1924636, BE876133, BE276137, BG167418, BE260683, BF689288, BE729399, BE743229, BE798940, AW327358, BF686061, BE867742, BE793973, BE794196, BE906835, BF796209, BG032341, BE910496, BE729123, BE795584, BF685925, BF688277, BF664113, BE797254, AU125091, AU125476, BF304782, BF974511, BG028500, BF690366, AV688740, A1857499, AV649335, BE535992, BE515181, BF026819, BE791778, BE273381, BF306736, BF965631, BE892850, BE784397, BE386123, A1890139, BE615419, AU135821, BF684036, BF686526, AV717421, BG107689, BE561555, BE257874, BE728389, BE897798, AV713597, BE873279, BE738312, BF034507, BE779827, BE906271, A1858090, BE547538, BE740779, BE795840, BE728491, BE743328, BE892259, BF983251, BG107819, BG116030, BG178795, BG108007, BG116134, BF237924, BF033799, AW662277, BE275014, BE795711, BF680070,



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HEQAH80	126	701984	1 - 1633	15 - 1647	BG118363, BE544656, BG117988, BG167671, BG250630, BE790344, AA814195, AV734349, AI765650, AI457718, AI085388, BE856855, AA633558, AI379449, BE785203, BE902117, AI476182, AI419034, AI037888, AA028963, AW009541, AW051402, W67841, AI304821, AA687642, AA934498, AI079438, W67782, AA035136, AI016426, W39585, AI808210, AA098932, AI685969, AW842530, AI685970, AI038819, BF002382, AI580447, BG231682, AI148797, AW839711, AA487780, AA485877, AI219571, W42434, AU157697, AU136379, AW973872, AA594455, AI865081, AI085147, AI202241, AA085457, AA632996, AA991990, AA035135, AU138203, D45612, AI473790, AK002121.1, AL033529.25, AC005015.2, AL035405.10, AL135911.16, AC011479.6, AC006261.1, AF001552.1, AL121808.4, AL024498.12, AL161756.6, AC073138.3, AL160471.5, AF288742.1, AP001728.1, AC008481.7, AC009086.5, AL031985.10, Z95329.1, AF215937.1, AC026413.5, AC010285.4, AL137229.4, AC083871.2, AC004921.1, AL021154.1, AC008745.6, AC006449.19, AC006441.13, AC074121.16, AL031255.1, AP001716.1, AC020917.4, AC002365.1, AL357515.26, AC011487.5, AC006111.3, AF001549.1, AC004876.2, AL137067.7, AC007686.5, AC010320.9, AL513128.11, AC010519.6, AC004019.20, AC005792.1, AC013726.7, AC004983.2, AL109976.23, AC004099.1, AF053356.1, AL049869.6, AC004950.2, AL080249.26, AC010469.7, AC008440.8, AC004832.3, AL008718.23, AC005859.1, AP001619.1, AL035072.16, AP001711.1, AP001694.1, U95742.1, AL035458.35, AC090954.1.
HETDW58	127	790557	1 - 1519	15 - 1533	AL515768, AL514639, AL514640, AL515769, AL519557, AL519556, AL519901, BF967595, BF341094, BF791789, BF967512, BG109630, AL519900, BE891391, BG122004, AV746319, BE779163, AV728675, BG107882, AV714586, BF307579, W44679, AV752184, AW968505, AI890560, BE894935, BF203162, BG163396, BG031520, BE895633, BF735925, AW954811, BE542157, AA878212, AA732222, AV713978, BE763324, BF921086, BE736572, AW965434, AW575099, AW575100, BF965804, AV752080, AI740578, BF732808, AW150933, AW276564, AA926775, AA454649, AA099273, AA813289, BF808054, AA916010, BF940195, AI419983, AA165256, AI928819, AI745053, AA143151, W93810, AW469220, AI738911, AW440214, BF766017, AI078212, BF726338, BF224030, AI761914, BE165923, AI693625, AA932898, BE672485, AW271592, AI148178, AI394261, AA044713,

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HET67	128	704077	1 - 1764	15 - 1778	<p>BF056294, BG058500, AI961165, AW271614, AI368021, AW299253, AW292132, AI867161, BE645878, AI828647, AI682948, AU154886, AW293105, AW028106, AA417331, AI261853, AA417319, AI200409, AI206774, BF940299, AI339756, AU145941, AI198182, AA173406, AI080232, AA173461, BF998461, BG252399, AA525437, AV688143, AV702071, AW965874, AV704297, AW950373, AV708807, AV708988, AW954003, AV726519, AV728467, AW956797, AW959796, AW967325, AV701880, AW951882, AW962924, AW962934, AW962003, AW957498, AV701646, AW952306, AW949351, AV703542, AW954336, AV729129, AV703624, AV727396, AW957985, AV706655, AW950678, AW960676, AV702164, AW954889, AW954235, AV694524, AV687808,</p>

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HFCDW95	129	847383	1 - 857	15 - 871	<p>AL529530, AV726582, BG180774, AW952054, AA398982, AL537902, BE739764, AV727582, AW300512, AV722244, AW029553, AI986473, AI950933, BG164817, AV726968, BF588526, BF476107, AW770808, BE874188, AA639868, BG252620, AI978599, AA142949, AI700677, BG059521, AI918056, BE866188, BE738987, AI828361, BF185676, BF445290, AA399621, BF031768, BF697098, BE785930, BF433181, AI380426, AU150075, BF030153, AI380761, AI040457, AW302413, AI678823, AA737313, AA548083, BE905006, AI273446, AI632020, BF001920, BG151519, AI887157, BF446900, AI925691, AI304432, AI375004, AA814501, AI284941, AI819675, AA708445, AW131704, AI478462, AL529529, AI741247, AA969450, AI308781, AA136378, BG054885, BG258115, BF701370, AI680947, AW148776, AV727838, AW304864, BF208666, AA432085, AA279397, BF028795, BF028097, NS2155, BF031629, D54791, BF591720, AA809096, AA155617, BF028402, AI803830, AI347883, AA983660, AA604572, AI262096, AW236261, AW576520, AA157854, AA588204, BF131266, AA088711, AA282014, AA702285, AA923508, BE048565, BF667411, AW780109, AI262793, BF341242, AA548251, AI421476, BF939796, AW194950, AW337256, D56471, D52957, AW887069, AI183568, HI7142, BE565940, AA137224, D52438, AA771875, D58681, AA137223, AV725549, AA150656, AA911258, AA446770, D54998, R79409, H09565, R33682, BF207904, AI613214, AA658190, AI421135, BF091420, F00903, BE184725, BE184795, D53702, BF448933, AI421134, AI080427, AI612899, M78614, BF028440, F00618, F04716, BE549554, AI816921, D51012, T35003, AI301723, AA484869, AA335305, BE866601, AI498636, H88563, AW801803, D52945, BF222159, AW801965, AA514008, H22397, AI424765, AI885113, BE896219, AI365192, T05851, R77482, AA652212, AA255908, AW134716, BF890688, N62323, T07892, T36093, BF833829, T31797, BE843694, T32233, F00108, AI811601, T30493, BG259677, D56534, F00210, R35636, M78491, N41045, AA995329, BF967013, BE926012, F02051, AA513039, BE865924, BE539516, BF476761, AI890228, BE184726, AW837831, AW607908, BF840954, D55509, BE811512, AW003098, BE891332, BE888598, AW750879, AW630713, BG104880, BF038524, AA136287, AA320122, AW138663, AW627379, AW028138, AA828915, BE702523, AA256021, BF131079, AW236903, R35739, T95736, AA912070, AV726830, AW897704, AA629231, AW272373, AW798454, AI269580, AA857847, AW075519, AI783861, AI367203, AI624293, BF885000, BF814450, AI611743, AI670009, AI560679,</p>

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HFCFD04	130	824057	1 - 1423	15 - 1437	<p> AV716496, BE888570, BE546077, BF965825, BE782146, BG167279, BG110715, AI065086, AA449054, BG260935, BE881187, BE614448, BF674653, AV722469, BG252153, BF965979, BE616168, BE887001, BE882005, BE540532, AW372448, BE614862, BE175667, BF965539, BE966951, BG106970, BG113118, AW994902, AW385002, BE886239, BG027899, BF792768, W68803, AA044586, BF574675, W68605, AW994907, AW005766, AA313320, AI735753, BE394571, AW994918, AA065192, AA207248, BE547089, BF035314, AI816303, BE676546, AA308811, BF844615, BE886124, AW994914, AW439778, BE349231, N74664, AW664111, AW474055, AA173773, AW473687, BG178073, AW994911, AA152278, AW994923, AW897705, BF793944, BE006074, AI870133, W84479, BE613154, AW169293, AA600026, AA223919, AW029616, AA864957, BE615632, AA703910, BG026866, AI961221, AA745728, BF803245, AA533078, AA031525, AI708769, AW157553, AA868231, W63577, AA563927, AA605228, AW167141, BE549280, AI627715, AA523269, AW157605, AW273498, AW188392, AW084702, AI830169, AI719921, AA528218, AI311300, AI146847, AI889789, AI421206, H04524, BF853684, AA845600, AI190685, AI961512, AW162960, AW009669, AI686875, AA181924, AW994904, BE540744, AA553419, AA807500, AA856789, AA887125, AI140886, AA437397, AI366822, N35821, AW195159, AI982619, AA305237, AI630899, AI419331, BE538798, AA135781, AW169160, AA456565, AI718862, AA173807, AA770012, AA085084, AA782607, AI421994, W72506, AA058897, BF111691, BE172914, RS4334, AI336698, AA455764, AI050759, BE327778, AW628279, AA716637, W58677, W76063, AI193113, AI022801, AW952624, AI538983, AI141950, AI879374, AI270339, AA722814, AI813968, AI336376, BE966220, AA205811, W51968, AA843228, AI372632, AI683702, BF338264, W79825, AA532753, W93035, AA845781, AI372631, AA776915, AW439698, AA010910, AI718658, BF802580, BF839567, AA206635, AA043848, AW118345, W78158, AA102791, W44653, BF216067, BE465662, AW302267, AA443076, AA706218, AW673771, AA423990, AA024509, AA747645, AW628244, AI535672, N74194, AI912882, AA011301, W44401, AW070574, AA702102, W92623, AA084600, AW474298, AA707827, AA594952, AA284955, AI446525, N98216, AI601176, AA112099, AA083808, AI540834, AI917876, AA101543, AI708854, AI690949, AI627756, W70194, AA661465, BE159367, AA825230, AW994901, AA043849, W73488, AI292191, AI758324, N70645, AA046047, AI559112, T36287, N93341, AA665584, AW589425, AI926917, AI925186, AI174573, AA435776, AA634925, AI989397, AW276719, AW674461, AW951684, W94550, AA030040, AW591620, BF820654, BF965459, BF029933, AI926710, AF279903.1, AF283772.2, AK000083.1, U91323.1, Z97353.3, AK024538.1, AL390154.1, AL136844.1, AK026542.1, AL359601.1, AK026480.1, BC004951.1, AL512733.1, AL389939.1, AK000652.1, AL122110.1, AF061795.1, X72889.1, AF151685.1, AL049382.1, AB056809.1, AB055361.1, AF090903.1, AL050172.1, AL356575.8, AK024588.1, AL137478.1, AK026959.1, AL049283.1, AK027096.1, AF097996.1, AK026741.1, AL512719.1, AK026927.1, AK027160.1, AL133568.1, AL136928.1, BC008899.1, AK025209.1, BC001646.1, AK025092.1, AL137480.1, AL080060.1, AB048964.1, BC004925.1, AB060908.1, AF090900.1, AL117457.1, AL133016.1, AL136845.1, AL050277.1, AK026534.1, BC008387.1, AL122050.1, AK026528.1, </p>
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HFEAY59	131	658685	1 - 1139	15 - 1153	I.
HFEB017	132	852218	1 - 976	15 - 990	AA339768, AI150703, BE386477, AC005919. 1. AW473576, AI089774, AW451782, AW295271, AA749033, BE440149, AI949946, AI469900, N68539, AW172942, AI872021, AW243195, BE858872, AI337875, AI376876, BE327191, BF939700, AI363093, AI471556, AI767259, BF114982, AI683261, AW028130, AW976177, BE349166, AA974484, AW027661, AI683115, AW614790, AI421188, AI281604, AW239182, AI750006, AW235809, AI493809, AA455090, BF878349, W37813, AV650898, F09284, AW193169, AA703436, AV649714, AA526238, Z41088, AI700797, AW268135, T92246, AV662283, AI916032, T17498, F02060, AV650183, BF768675, F04236, AA935093, BE884109, AV649952, AA937505, AV649940, W37230, AA585284, AV649786, AV651140, AW976261, AW365708, AL137741.1, AK000272.1, BC001249.1,

HFGAJ16	133	580824	1 - 852	15 - 866	BC000937.2, AL162084.1, AL157494.1, AK027465. 1. AI521623, AA824344, AI686904, BG036402, AW874351, BE409491, AI085386, AI131334, AI075119, AI027896, BE675717, AL043654, AW084980, AI768368, AI453733, AA557213, BE541822, BE562864, BE275955, AW055295, AW276414, BG057638, AW276196, AW029588, AW300807, AW780412, BE302028, AA618624, AV740886, AI991844, BF341036, AA812758, AI922585, AW071911, AI799340, AI701919, AI687575, AW516682, AI588849, AW079022, W72618, BF304947, BF569021, BG104981, AA166859, AL518028, AW516312, BE349418, AA865627, AA933786, AI125113, AA723561, AU154218, BG033819, BE747741, BF568781, BE378889, AA838342, AW190777, BE748649, BF569177, BE617665, AW070796, AW083429, AI240853, AA745991, BF570409, AV736831, BF436625, BE271684, AA583556, BE899165, AA630957, W67687, AI186882, BE745859, BE314932, BF982128, AA612653, BE272396, AI075320, BE617678, AW971899, AI141904, AW026690, AI086514, AA806657, BE818652, BE271324, BE896860, AI355402, BG116824, AI131122, AI201619, BE899239, AI149283, AW796145, AW881732, BE393628, AA151107, BE818644, AI951063, AW405547, AI042097, AI376212, AI052116, AW050615, AL522194, AI025098, AI027542, H41430, N80901, AV739392, AV739394, BE818641, N70515, W94930, N49685, AA962027, AA583938, AA722166, BE895861, AI610161, AI141893, AA776762, AW815386, AI937754, AI369279, T79609, AW029369, AI339513, BF090753, AA253447, AA190503, AW815544, AA707810, AW582297, AW582294, AW815559, AW582307, AW815397, AW380345, AW582291, AW380352, AW391287, AW391314, BE744697, AW768428, BE162642, BF350202, AW815539, AW815538, W31787, AW815541, AW362645, AA552048, AI144446, N33111, AA552047, BF770616, AW815350, AW371281, AW582292, AA862364, BE062978, AV738695, W76449, AW815388, BF329952, AI905254, AI289982, AI863871, BF445715, AW371310, AW473718, AA789118, AI005493, BF902098, AW815376, R88241, AW815374, R71681, AI869545, BF350205, AA775053, AI272779, AW582263, AW073265, N21025, AA54523, AW371276, AW391324, AI625289, BE535416, R78099, AI001123, AA293177, AA411106, AW391329, BF902080, AA293178, BF924386, BF738443, AA828457, AW815368, AW380326, AI401689, AI039284, BF902082, AA179560, F28928, AA988113, AA190989, BF969001, N35305, AW247909, AW391325, H53616, R46684, BE767975, BF924387, AW391298, AW379294, T54125, F03941, BF037800, F28963, T27763, AI349317, AI185359, BF924381, N70522, BF902088, AW796164, AA453107, BF090764, BF929759, T84092, W16877, W72723, AA430430, BF090745, BE092631, BE742553, BF902073, BF924374, BG015176, BG259803, AA179512, AA928644, U52111.2, U36341.1, AC002041.1, U41302.1, Z31696.1, X81817.1, X81109. 1.
HFIHZ75	134	827872	1 - 1266	15 - 1280	BG105398, BG170242, BE888290, BE766571, AV714598, BG119420, BE897546, AI660844, BG170184, BG231588, AA058838, AW949413, AV721650, AI885275, AV706062, BE540752, AW950747, AW886995, AI696853, BE617649, BF966634, AW886457, AA598546, AI539340, BF896602, C05042, AA099663, AA310272, N73537, W42763, BF725398, BE843106, AW819084, AW007547, AW238376, BE891410, AI423238, BF326369, AI369072, AI819669, AI682911, H01984, H04242, H46888, AA214320, BG170355, W40490, BF310720, AI671517, AA732798, BE350213,

					<p>AI65867, H02606, AW518684, AW512885, H51468, AA805604, BE617157, AI283830, AI089446, AA844062, AW471393, AW803038, BG055802, AW674138, H54905, AI359334, AI812088, H46307, AI201796, BF806934, W40486, AW001403, BE179302, AW589571, W31209, H02079, AA837758, AI341783, H50242, AI333766, AW960606, T18903, AA099203, BG055942, H65757, H82345, AI368979, AI963577, AA778056, T36177, AI421932, AA016205, AA993811, H50280, AA457142, AA813708, BG057087, H82245, AA446938, AA443655, AA503240, AA349135, AA612602, T31857, AI721097, H51426, AI468714, AI369041, BF571934, AA676211, W42620, N32517, R23178, AI014786, AA458476, AW993477, T51639, AI086136, N74595, BF349451, T55425, R23177, R18511, AI203761, AW149445, N42732, R06712, AA910189, AW055037, BE966889, AA402530, BF895263, W68074, BE710892, AI753209, N77518, R34016, R41505, AW166873, AA630411, BE884829, AW243489, AA757475, AI696380, D25759, AW860451, AW797160, R14803, BE855838, AA401089, R06711, W04540, AW104032, H54904, AI243075, C20591, BF369560, T31161, T51797, R40112, AI709020, AW842750, H02707, N36584, BF899874, AA782248, D59619, H65758, D80253, AV719822, AV718489, AV718692, D80196, AV719783, AV701125, AV718844, AV720464, AV720731, AV701043, AV701332, AV701248, AV701431, AV724520, AV699927, AV742001, AV742667, D51423, AV720203, D80045, D59927, D80219, AV720211, AV701017, AV722801, D80366, D80193, AV720812, AW973447, AV723927, AV701166, AV701154, D59889, N56246, D80043, AV701335, D80210, D59275, D80240, D80391, D51250, AV699550, AV701419, C75259, AV744773, C15076, AV700229, AW895047, AV743601, AV701021, AV701149, AV701344, D50995, D80195, AV742720, AV721784, AV699447, AV719000, AV700889, AV744768, AV744934, AV701130, AV745080, D80134, T03269, D81030, D80022, AW194354, AV723097, D80227, AV701428, D58283, C14014, AV719324, D59787, AV741012, AV699479, AV701415, AF267863.1, AF271371.1, D34614.1, X67155.2, D88547.1, S78798.1, X92518.1, L27636.1, AF058696.1, AB028859.1, AB035274.1, X98248.2, X60736.1, AB002449.1, D50010.1, AB033111.1, AB038216.1, U79457. 1.</p>
HFIIA29	135	839206	1 - 1261	15 - 1275	<p>AW195543, AI051690, AI927925, AI051699, AI434786, AI675823, AW590850, W84675, AI971192, AA767204, AI767042, AW139875, AI521899, BF195790, AI250256, AA829382, N20059, AA215409, H13567, Z38968, AA526451, H01273, H13200, R08173, H01182, R82482, AW972928, AW207335, BF242637, AL031259.1, AL049844. 7.</p>
HFIIA68	136	847074	1 - 1143	15 - 1157	<p>AA032221, BE881257, BF573995, BE875216, AI686139, AL048969, BF826830, BE061906, AU157011, N49425, BE775020, AV763498, AA974503, AV710762, BF525393, AV696428, BE972379, BF667616, AI354847, BF038189, AV691908, AW405593, AV684596, BF916850, BG260565, AC004969.1, AC005061.2, AC005053.1, AL109827.8, AF186249.1, AC009144.5, AP003357.2, AC006277.1, AC006435.7, AC023105.7, AL050335.32, AF243527.1, AC005323.1, AL022165.1, AC024561.4, AC004848.1, AL353807.18, AL445584.16, AP000030.1, AC018638.5, AP000505.1, AC012476.8, AL035458.35, Z85987.13, AC009060.7, AP000152.1, AC073657.5, AP000044.1, AP000112.1, AC006571.12, AC026888.6, AL022163.1, AC008569.6, Z98742.5, AL118501.22, AP001412.2, AC007845.12, Z85986.1, AP001711.1, AL035072.16, AL355392.7, AF045555.1, AL049776.3, Y14768.1,</p>



HFKES05	137	827572	1 - 1871	15 - 1885	<p>Z97985.16, AC011443.6, AL445490.6, AL117336.22, AP001716.1, AC020916.7, AC090426.1, AC008753.8, AL359091.10, D88270.2, AL583856.6, AL096791.12, AC007637.9, Z93017.6, AL050318.13, AC010150.3, AL365505.15, AC005049.2, AP000692.1, AC005250.1, AC007546.5, AC087071.2, AC006285.11, AL033529.25, AL121594.6, AL160269.14, AL136300.22, AL356481.16, AL158830.17, AC019205.4, AC007216.2, AL133448.4, AP000501.1, AC018828.3, AP001760.1, AL158198.14, AC008892.5, AC022415.5, AL109797.18, AC011497.6, AL132780.5, AC005480.3, AC004099.1, AL133249.1, AL121655.1, AC005375.4, AC009961.11, AC005522.2, AC011895.4, AC016025.12, AC012170.6, AL356652.19, AL117381.32, AC021999.4, AL139415.10, AC005914.1, AL163201.2, AL078461.38, AC034193.4, AC006057.5, AC02070.1, AC005387.1, AL121658.2, AL450339.5, AF129756.1, AC005231.2, AC002072.1, AC002070.1, AC005387.1, AL121658.2, U95742.1, AL022721.1, AC011484.4, AC010618.7, AC016830.5, AL161670.4, AC006130.1, AL138836.15, AL137792.11, AC005778.1, AL121905.23, AL049869.6, AC005081.3, AL359236.4, AC020750.3, U95740.1, AL137012.6, AC002350.1, AL121992.24, AL139809.16, AC005519.3, AL121601.13, AF196969.1, AC004990.1, AF168787.1, AL136981.22, Z98946.15, AL133373.5, AC005500.2, AF254983.2, AL049539.21, AL355094.3, AC010463.6, AL121972.17, AL354707.17, AC010530.7, AL022323.7, Z99716.4, AC007193.1, AL121926.24, AC073138.3, AC073073.2, AC005077.5, AL360169.17, AC009244.24, AP001728.1, AC005332.1, AL157823.9, AC020931.5, AC018758.2, AC005052.2, AC007387.3, AL135927.14, AC007227.3, AL359644.10, AC072052.6, AC005251.1, AC018636.4, D86992.1, AC006449.19, AL021397.1, AP001753.1, AC005291.1, AL031846.2, AL133517.11, AL359092.14, AC007242.3, AB038653.1, AC018711.4, AC022148.5, AL136137.15, AC025168.7, AC011005.7, AC004867.5, AL136126.34, AC025588.1, AC009087.4, AP001714.1, AC018506.4, AC034240.4, AC073866.16, AC007991.7, AC011465.4, AL121886.22, AC007731.14, AL356915.19, AL109654.22, AC008610.6, AJ246003.1, AF134726.1, AC008543.7, AC004883.2, AC005736.1, AL391114.12, AC069255.18, AL135839.15, AC006345.4, AL391749.4, AC007488.15, AL137918.4, AP001731.1, AL157373.23, AC000360.35, AC004873.3, AP002428.3, AC005399.19, AC005280.3, AC005200.1, AL391137.11, AL080242.11, AC007263.4, AL110502.1, AC026464.6, AL031311.1, AC020983.7, AL136980.5, AC026448.5, AC004643.1, AC024166.3, AL136295.3, AL139317.5, AC002091.1, AC073136.6, AC008403.6, AP000134.1, AP000212.1, AC004686. 1.</p> <p>AL523262, AL529538, BE899393, AW084916, BE747028, BF311012, BE728739, BE312851, AL040564, BE742382, BE735998, AI381488, AI146820, AW161993, BF529932, BE383932, BE259400, AV710840, BE382374, BE744761, AL043582, AW439423, AL043581, BE646448, BG171573, BE677335, BE677477, AI554451, AA131317, AW088167, BF314148, BE261821, BG166503, BE279879, AW168887, BE646180, BF316303, BE046496, BF197687, AA744952, BE745721, AI218269, BE312818, BF314164, BF594180, BF314798, BF593719, AI151026, AA194202, AI418964, AI453314, AI873815, AW130388, BF913893, AA195161, AI269934, AA719396, AA625370, BE312619, BE252921, BE207433, AA492412, AI042024, AW250536, BF573185, BF037936, BG179218, BE302543,</p>
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					AA194044, AI147243, AW340657, AA947438, AI091020, AW117635, BF570164, AI445860, AL045225, AA115998, AI021898, AW732559, AI421387, AU152077, AA968905, AW662299, AA837991, AA131418, BF812798, AA194939, AL043070, AI948633, AW249876, AA195538, AA506433, TI16224, AI589527, AA936491, AW016162, AA883810, AW118179, R54823, AV690033, AI560986, AV688867, AA459190, AA354156, C18845, AA378263, AA862775, H61307, AW806534, R45155, AW263382, AI277162, BG254511, W79694, AA458974, T31333, H39688, T34870, AA456441, AA301052, R40792, AL523263, C18401, R87505, AA063352, BE140370, R13315, D20272, BF568555, BE242030, BF033566, AI364386, BF940389, AA301053, AW419282, AW274389, H62348, BE938508, BE832988, BF569370, R87587, T65226, AI940182, BF844052, BE243197, AW886929, D61534, AI254353, T65265, AU124203, BE207881, AA194949, AA569639, AV762557, AV762552, AA862769, H18657, D83782.1, AK027402. 1.
HFKEU12	138	634006	1 - 1017	15 - 1031	AW419343, AW471004.
HFKFX64	139	566835	1 - 765	15 - 779	AI202664, AB051500. 1.
HFPDS07	140	821646	1 - 3101	15 - 3115	AL138380, BG169720, AI935102, AL120733, AI928091, AI928011, W72090, AW271410, AA551081, BG113927, AW772074, AW959045, AL138379, AI983516, AW772179, AL119876, AW750506, AI271626, AI859876, AW878298, BE221757, BE163453, H06458, BF382374, AI907486, BF130814, AI916682, AI758362, AW271209, AA290669, AI566124, BE161772, AI077407, N25719, AI285616, AI913586, AI634813, BE896666, AI167751, AI285477, BE677209, H06190, AI025494, AI292349, BG152819, AI308160, AA886323, AI373322, AW301256, AI041948, AI471716, AI768851, AV741773, AI307322, H14353, AI634998, AI698509, AI351573, AW294911, AI261641, AA856595, AI095281, AA074968, AA860616, H29066, AI478791, AA919131, N34108, AI014277, AW236657, AW892423, AW902232, AW577932, F02807, AA480959, AI474062, H14403, H14401, BF131072, H12971, H28963, BF247454, BF744260, AW291589, AI949893, BF511921, AA974976, AI915600, AW955549, AW001067, AA291059, H05610, W27987, H14355, AA312996, BE221771, AA293538, TI15966, BF350974, AW772167, AA743242, AW001784, AA279312, AI698225, AI684574, AI910758, BF350974, AW772167, AA743242, AW001784, AA279312, AI698225, AI684574, AI910758, AW771561, BF745864, AA293539, AI244048, AW237508, AI699414, BF743973, R44845, AW027799, AI702405, AW193170, R89349, BF745792, AI701634, BF820106, AI245038, H29375, Z43420, AI698390, BE672282, R89441, AI792960, AI828035, AI589927, BE009865, AA361265, AA743243, BF842716, AI002804, AA074891, AA741569, AA223681, AA863134, AA723133, AI692272, AW817674, BF818070, AA810931, BE774846, M85518, AA831595, AW997572, AA100788, AI732415, AI732449, AA088431, AW470768, AA521126, AV755560, W27345, AF327434.1, AB020645.1, AF223943.1, AC067945.4, AF097493.1, AF158555.1, AK001220.1, AF097492. 1.
HFRAB10	141	745380	1 - 1405	15 - 1419	BF224101, BF593175, AI302700, AI161203, BF057163, N51360, AA394289, AI651758, BE672273, AI423054, AW090632, AA976204, AI167950, AI961153, AI360906, AW303583, AA527127, N50920, AI621051, R50850, F09016, M79104, AI933711, R53937, F11356, AI825042, R39087, AA412141, Z39744, T80400, R39312, R44552, M78951, R46134, T17357, Z38651, AA888981, AL118982, Z19723, T78686, BE708549, AB002297. 1.

HFTBM38	142	638338	1 - 1927	15 - 1941	<p>BF968913, AA570398, BF347068, BF344994, AA326020, AL079872, BE613028, AW838912, BE044516, AA602471, BE672401, BF685077, BF746226, BE326895, AI480220, AI937044, BE061924, BE220469, BE061912, AA325896, AW072853, AI089735, BF330621, AW291237, BE772876, AW964693, AA410930, BE772826, BF747406, AW304942, AW370278, H29431, BF058399, AI862772, AI363103, N94392, AW514350, AA570138, BE772883, AA884986, AA625753, W61300, BF475720, AW070670, BE613183, AA868991, AA325436, BF742302, BE772766, BE772830, BF958918, H29336, BE839173, BE265582, H17864, H29432, BE839167, BE839170, BE772815, R21499, AA323963, AW078921, R42881, BE839096, BE839176, H1141, R49393, H17865, AI668927, BE839166, BE838964, BE839099, AI086318, H43521, BE350499, BE328515, BG056148, AI698485, AI621351, BG060048, H11056, R50356, AA994447, AI479570, AI866814, BF843988, Z41109, AI623712, AI970269, BE839097, T78036, BG109901, H42521, BE839133, H40983, AI419678, AA730385, BE839168, BE839134, W65364, BE083917, R35006, Z45394, AW370252, F07180, H46118, BE925489, AI940302, BF307296, BF871191, AW020419, AA939199, BE781405, AI095222, AW236186, AI653578, AI349957, AI345005, AI345014, AW953817, AW957086, BE878735, AI345261, BG170109, AW967299, AI146301, AA587120, AL120831, BE885353, AW058275, BE138644, AW151974, BF813196, AI421662, BF814072, AI868180, AV682089, AA811656, AI348917, AI690472, AW151974, AI340610, AI287476, AI348870, AV656903, AW302992, Z98519, N75779, AI687568, N25033, AI473471, H12358, AI167594, H89138, AW845239, AW152240, AI334738, AA903145, AL042959, AI340627, AI611728, AI241678, AI348854, BE562685, AI344931, AV757546, BE742905, AI634472, BE974031, AW827207, AA600801, AI632808, AA155840, BG112718, BF872670, BG121551, AI918554, AI784214, AI702301, AW239449, AI630932, BF344395, BE783206, BG167393, AW022682, AW074057, AI584118, AI565932, AI679959, AW129717, BF129016, BF680133, AI267185, BF812936, BF753056, AI468959, AI612885, BF036448, AW081008, BG058217, BF815930, AI879377, AI633225, BE889925, R41605, BE785905, AI804836, BE790023, BF126355, AW083572, AI656270, AW059828, BG105381, AI343091, AI335476, AW189563, BE962830, AW999906, BE613598, BF764538, BG171581, AI309443, AI311892, BE739277, AI307736, BE172864, AW020693, AA582431, AI688848, AV706353, AI349266, BG253683, BG026764, AI349628, AI349246, AI340552, AI584130, AA417278, AI500683, AA749184, AI401697, AI499104, AL045983, AI799189, AI349245, BF969900, AL357752.19, AI132768.15, AC078958.30, AC007719.7, AC073848.4, AL139022.4, AC021325.5, AC009179.17, Z99297.1, AC090498.2, AC079175.24, AC006197.1, AL035407.15, AC018904.6, AL122045.1, AL133069.1, AC006203.1, AL389935.1, BC001963.1, Z94277.1, AC068715.5, U57352.1, AK027115.1, AL121585.22, BC004324.1, BC005151.1, AL136915.1, Y00093.1, BC008070.1, BC007199.1, D89079.1, X59812.1, AF353396.1, BC003122.1, AK000137.1, AK024545.1, AK024622.1, AF117959.1, BC003105.1, AK025117.1, AL135978.4, AL355365.10, BC005165.1, AK025524.1, AK025456.1, AF090896.1, AB047930.1, BC004196.1, AB050410.1, AF218004.1, AK025549.1, AB063100.1, U80742.1, AL080126.1, AL117644.1, BC000001.1, AK026021.1, BC008717.1, AF111847.1, AL136845.1, AF056191.1, BC004119.1, BC000008.1, BC007417.1, AK027104.1, AL359623.1,</p>
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HFVGK35	143	731868	1 - 1222	15 - 1236	BE545819, AV728545, AW611729, AI870316, AI339967, AA039304, AW974678, AA649609, AI368236, AA904691, AA278755, D63313, H66920, C17470, AA830507, C00299, AA743299, AI821937, AA658477, BF106240, AA826320, AA620588, AW572692, AA730415, BF475757, AC009311.3, AL121899.37, AC008736.6, AC074121.16, AL157823.9, AP001150.4, AL357752.19, AJ246003.1, AC087590.1, U95742.1, AL355543.13, AC007216.2, AL121658.2, AC012442.7, AC015651.18, AC007345.5, AC044797.5, AF108083.1, AL080243.21, AC008044.4, AC007098.4, AC002565.1, AL158214.33, AC005606.2, AC005520.2, AL136105.9, AP001711.1, AC016643.6, AC009996.7, U80017.1, AC013414.7, AC090518.2, AC026172.3, AL023553.5, AC006241.1, AC005886.2, AC073542.4, AL353692.14, AC020916.7, AL049874.3, AC079468.3, AC004089.25, AC004983.2, AC005031.1, AL499629.1, AP001830.4, AC079602.15, AC005081.3, AP001709.1, AC006571.12, AL050348.21, AC018638.5, AC005529.7, AC009516.19, AC008482.5, AC005486.2, AC010320.9, AC005363.1, AC073138.3, AC012476.8, AF001549.1, AC005940.3, AC003663.1, AC004685.1, AL020997.1, AC005740.1, AC003957.1, AC007637.9, AC002301.1, AC004125.1, AL359402.3, AC007308.13, AL136223.11, AL121585.22, AC012156.14, AC004832.3, AC022007.3, AC005562.1, AC012076.4, AE006640.1, AC008962.8, Z99128.1, AL035458.35, AC034200.6, AL136300.22, AP001781.4, AC009753.5, AL162740.13, AL390838.26, AL109806.22, AF243527.1, AC004383.1, AC018751.30, AC004682.1, AP002898.1, AC011811.42, AC002470.17, AL139021.6, AL021878.1, AL117377.18, AP001922.4, AL034380.26, AC008569.6, AF168787.1, AL035089.21, AL162430.15, AL139330.17, AL031657.5, AC004382.1, AC010319.7, AC004675.1, AL160165.17, AC005086.2, AC010605.4, Z99716.4, AC006077. 1.
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HFXBT66	145	580831	1 - 987	15 - 1001	AL046409, AI963720, AI334443, BG109996, AI350211, AV761106, AV728425, AI284640, AA610491, BG249643, AW500125, AW327868, AV740801, AW502975, AL138265, AV725423, AV702857, AW193265, AV764307, AW576391, AL119691, AW021583, AW953071, AV760466, AW410400, AW833862, AW518220, AV760937, AL120687, AV762098, AA581903, AI431303, AL048925, AW274349, AW303196, AW974109, AW270270, BG059450, AF330238, AI754253, AL038474, BF337291, AW501386, AL041690, AI289067, AW301350, BE206443, BF668217, BF241967, AI613280,

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HFXFZ46	146	600361	1 - 1364	15 - 1378	AI139785.
HGBER72	147	826710	1 - 1302	15 - 1316	AI827764, AW963463, AV728410, AW964231, AV705122, AW956640, AW963895, AW956641, BF918640, AV702172, AI732151, AW958318, AW021917, AV759632, AW974932, AV702109, AV704541, AV704467, AV705086, AI962030, AV725237, AV711430, AW500029, AW956077, BF760919, AV762633, AV703573, BF804385, AW962006, AW970877, AW302909, AA905613, AV728369, AV763026, AV763058, AV702760, AI188390, AV729337, AA644090, AW969743, AI358384, AV729272, AV702343, BF750422, AW962942, AV726091, AW963497, AV703597, AW973992, AW960468, AV709273, AI305766, AV762454, AW966064, BF911056, BG236628, AW963542, BE063437, BF916934, BF347791, AW410354, AI017251, T05834, AV762982, AV711465, AW955841, AI279417, BE150580, AV762033, AA584489, AA904275, AL040054, AV757607, BE019467, AV758903, AV728425, AV703063, BF347740, AI963720, AW816516, BE294700, AL042373, BE395467, AW963489, BE178609, AA720732, AV712092, AW514662, AW069769, AW731867, AA574442, AV759557, BG029528, AV764259, AF246229, AC007731.14, AC005500.2, AC004033.3, AP001725.1, Z98941.1, AC005391.1, AL353653.19, U78027.1, AL034405.16, AC002301.1, AC004477.1, AL121897.32, AL133396.2, AC018638.5, Z83844.5, AC020916.7, AL035587.5, AL391241.21, AL096791.12, AL096865.28, AC002542.1, AL035422.12, AL117694.5, AC008543.7, AC005037.2, AC005841.3, AC005756.1, AL133551.13, AL109758.2, AL021155.1,

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HGBEY14	148	658691	1 - 1724	15 - 1738	AW968598, AI658664, BF514897, AI478203, AW967773, BE217946, AI795923, BF196102, BF436879, AA768899, BF515994, AI139330, AA847849, BE220879, AW614077, AA465270, AI640819, AI564100, AA252471, AA456392, AI253083, BE812744, AI268480, AA805944, AA455923, BE677776, AW576288, BF509597, AW452053, AA742295, AI668807, BE645036, AW611783, BE671268, AI356895, AI076847, BE139537, AA861028, AI167589, AI652754, AI749748, AI022306, AW008697, AA026333, AA465157, AI473203, AA741570, AI452883, AA026332, AI560649, AI400078, BG028883,

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HGBGN34	149	648659	1 - 514	15 - 528		BF589439, A1127070, W95725, A1829385, W95768, AA732915, A1183361, AW967153, BE351006, BF941150, A1401364, AA321136, A1750875, AA321135, BG115775, AA878380, AA724102, AW962617, AA368761, AA455370, C00920, AC006208.3, AK024425.1, AB029496. 1.
HGLBG15	150	701990	1 - 764	15 - 778		A1377951, AA478899, AL521476, A1970420, BF571396, BF690972, AA478780, A1522149, BF571271, AA758425, AW956237, BF692249, A1954716, AW197154, BF576614, A1631753, A1829079, A1765476, H99846, AW274419, A1371713, A1951909, AW769338, BF516230, H19109, A1925973, A1932682, A1138219, A1301748, A1956119, A1755080, A1378559, A1080154, H05933, BF000829, AA031313, AW090099, AA736498, AA852791, AA852790, AA928061, A1699043, A1087918, A1468315, R56048, A1469137, AA248855, AW517996, BF541232, BF838384, Z38380, BF838382, A1760228, R55989, A136597.1, AC005082. 3.
HHEGS55	151	858372	1 - 580	15 - 594		AL526527, BG113611, BF978449, BG112152, BG119645, AW956161, BG180022, AW592434, BF434127, A1688154, AA890706, BE266768, BE700345, A1192484, AA908255, AA516363, AA446942, AW172490, AA923183, A1499002, A1766675, A1203601, AA894580, A1144379, BF346299, BF969646, A1118533, BE887334, AV760144, BE874811, AA865339, W72592, AW005448, A143717, A142574, AA906273, A1021941, A128074, AW663560, A131132, A1304388, AA669930, A1304344, A1346611, A125747, A1311556, AA703026, A1266188, A1516896, A1025716, AA907108, BE390622, A1870412, A1870389, BE785805, A1288868, AA733097, BE789031, BF027056, BF035717, BE870307, BE389154, AL538540, N21316, BE780661, AA075002, A129647, BG178120, AA774581, BE786810, BG165094, AA075113, AA443366, H70758, BE387196, A1525737, BF346268, A1264657, AA676415, W80864, AA644550, A1023409, AA772235, W67811, AW501988, A1807013, AA299952, AW474224, A1269880, AW629279, BG177563, BF800060, W67866, BF034810, BE547050, BG028159, BE083939, N80176, A1051331, AW592042, BE247222, A1201765, AA860195, AA081004, BE244890, AA019463, N34142, W88877, A1193593, N67021, A1192316, AW795216, N26033, BE084138, BE002622, A1084602, BE774587, BE832659, W76106, AW140058, N42641, BE832664, AA058752, AW994714, AW994775, A1768257, AA018536, AA888922, AW085016, W42800, BE093798, AA706242, AW994696, BE813681, AA384060, A1860208, N46027, AA081147, R96612, AA887957, BE708347, AW993971, AW192384, N41872, BF794279, A120547, AA370582, BE832568, AW591801, AW236343, AW157602, N40396, AW294314, AW272410, AA723436, W35238, N31251, AA886238, BF817120, BF818982, AA373471, AW131477, H95094, AA808734, A1871211, AL038165, H79809, A1904418, AA534807, A1799628, AA299951, BF361806, AA001163, AA608755, BE798428, BE084059, AA988507, A1761279, AA564284, BE002993, A1949117, BF817107, AV756014, AW384875, AA393462, AW514936, AA454946, AA922856, AW408230, N30627, BE779312, W81429, BF448458, AA876205, H58732, AA831555, BG166267, BF695720, A1743703, N56626, N66943, AA017731, AV684502, AA724567, W24284, BG164949, AW957013, AA724553, H03450, BF056116,
HHEOW19	152	886174	1 - 1575	15 - 1589		



					AL522121, H03534, W80538, AA193154, N30204, N44250, AA485314, AA485471, AI630146, AA806310, AA400785, AL043900, BE160214, AI338385, N36376, BG014060, AU133112, AW273251, AI218055, BE868284, AA923109, N36810, AA814225, N84302, AA017732, AA313506, AI906913, AI341766, N76206, AI298554, W03500, AW002024, W86743, AA746052, BF365269, W81430, AI351319, AC006001.2, AF098276.1, AC027644.9, AJ250042.1, BC000882.1, AF098275.1, AP002827.3, DI3641.1, AC004074.1, AF098274.1, AC008267.6, AC005077.5, AK001702.1, AF126961.1, AF126960.1, AF126962.1, AC005231.2, AF126958.1, AK026600.1, AB060825.1, AC006285.11, AK024538.1, AL122050.1, AC016025.12, BC002733.1, AL137538.1, AB056809.1, AK026927.1, AL136787.1, AK026480.1, AL049466.1, AL110196.1, AB063071.1, AL162006.1, AL122093.1, AL050277.1, AL110221.1, AL110225.1, AK026629.1, AB055361.1, AK026506.1, AK026542.1, BC008387.1, AF091084.1, AK026583.1, AL049430.1, BC001967.1, AB048954.1, BC008070.1, AL133080.1, AL050146.1, AL050393.1, AL389935.1, AF090943.1, AL049452.1, AK025084.1, AK025092.1, AL122100.1, AF090886.1, AL136789.1, AL136586.1, S78214.1, AL136882.1, AL137478.1, AB048953.1, AK026959.1, AL136844.1, AB063046.1, AK026784.1, AL133072.1, U42766.1, BC003687.1, AB019565.1, AK026741.1, AF017790.1, AL133557.1, AL050108.1, BC007021.1, S61953.1, AK027113.1, Y16645.1, AL049283.1, AB047615.1, AK000137.1, AB055366.1, AK025484.1, AL136892.1, AK000486.1, AL133560.1, AB051158.1, AK026744.1, AK024992.1, AK026086.1, AL117583.1, AB060908.1, AK025491.1, AL050116.1, AF125948.1, AF097996.1, AB060916.1, BC001045.1, AL512689.1, BC007199.1, AF217982.1, AL050024.1, AL137459.1, AK000083.1, AK027204.1, AL359615.1, AL442082.1, BC006807.1, AL133565.1, AL049464.1, BC005858.1, AK000618.1, AB055315.1, AB056420.1, AL136893.1, AL133075.1, AL117457.1, AL133016.1, AL157482.1, AL512719.1, AL512718.1, AF090900.1, AL389939.1, AB049892.1, AF218014.1, AK026045.1, AK026647.1, AL049314.1, AL390167.1, AJ242859.1, AL136747.1, AK025015.1, AL096744.1, AK000323.1, AL442072.1, AB060914.1, AL117394.1, AL136749.1, BC008488.1, AL137283.1, AK000445.1, AB060893.1, AL136780.1, AK000212.1, AB062938.1, AB060852.1, BC008417.1, AL137550.1, AL133606.1, S76508.1, AK026592.1, AK027868.1, BC008365.1, AL136799.1, AB060826.1, AF078844.1, AL136928.1, AK024588.1, AB063070.1, AK026855.1, BC008899.1, AK026522.1, AB060863.1, AL117460.1, AK025239.1, AB052200.1, AK027142.1, AB047904.1, AF260566.1, AL136845.1, AF106862.1, AL080124.1, X82434.1, AL137557.1, AL133640.1, AL512754.1, AL133081.1, AL353957.1, AL117585.1, AL359601.1, AB055368.1, AL136768.1, AF090903.1, AL050149.1, AF262032.1, AK000206.1, AF111847.1, AL157431.1, BC004556.1, AL359620.1, BC006195.1, AL122123.1, AB060912.1, AF090934.1, BC001418.2, AL512746.1, AK026526.1, AF125949.1, AL359618.1, AL137521.1, BC007326.1, AK027096.1, Y10936.1, U58996.2, AB052191.1, AL137648.1, BC004195.1, AK027213.1, BC007674.1, AK027200.1, AF219137.1, Z37987.1, AK026452.1, AK025772.1, AL512765.1, AL136864.1, AB062978.1, AK024524.1, BC003683.1, AB048964.1, AL136615.1, AK025339.1, AF225424.1, AL512733.1, AL080137.1, AL133113.1, AF061943.1, AL122110.1, AL137429.1, AK026057.1,

HHFEC39	153	609873	1 - 1288	15 - 1302	AK026353.1, AK027082.1, AK026613.1, AB047801.1, AB055303.1, AB060887.1, AK026534.1, AL080060.1, AL110222.1, AL162083.1, AK027114.1, AK025410.1, Y14314.1, AF146568.1, AF090896.1, AL117435.1, BC008983. 1.
HHFFF87	154	778071	1 - 1533	15 - 1547	BE178297, BE891680, BE178296, BE178286, BE177969, A1817262, BE178117, BE220165, AW025400, BE178101, A1377829, C06099, BE178000, BF940116, A1422898, A1089906, AA583355, AA971743, AA044947, AA044943, A1076496, A1299481, A1376081, AA427892, H98616, AA618566, AA532381, A1080656, AA884934, AW341785, AA730790, A1139706, AA139974, AA992454, N99650, A1094082, AA483691, AA482694, D62553, AA001089, A1205651, R80152, Z36959, A1692586, AW958955, F10610, AA516076, A1311975, A1313288, A1379372, A1348747, D62481, A1610907, AA513037, A1611925, A1784325, BF054671, D62330, BF054866, BF057878, AA149057, N71679, AA923038, AW969749, BF364372, R43511, D62106, D79281, N83844, T75442, BE168027, BE936283, F13013, BE043482, A1348789, D62153, BE168085, BE178420, BE177858, AL022726. 1.
HHFFF87	154	778071	1 - 1533	15 - 1547	AL516055, AL516057, AV686470, BF038088, BG251140, BF965627, BE872139, BG034353, BF034784, BE872898, AA788716, AW574831, BG252676, BF981092, BE789474, BE548572, BG027587, AL535376, AA481267, BE549299, W02499, BF149238, AW952779, BF668259, BE741693, AA702364, AW249675, AA670142, BF130975, AV744406, BF672892, AL535377, AA449066, BE543828, BE730536, A1340344, BF211722, AA405844, BF968396, AA835670, BG035026, AA025361, A1268387, A1460310, AL536344, BF666715, AA482504, AA150951, A1707489, AW166103, BE141381, BF678263, AL516056, AA282314, AW364982, AL535354, BF028770, A1858318, A1884596, AA861780, AA662306, AA946770, AW167927, A1923202, AA883935, AA767648, AW572427, AW015684, A1126442, AW006006, AA677666, BF001331, A1142443, A1033576, AW264134, AA447221, A1200699, A1017296, A1573221, A1092218, A1991218, A1571923, AW261883, AA482065, AA916817, A1095431, A1306426, AA156491, BE300590, W35171, A1333820, AV699918, A1339695, A1249160, AA156355, AA148076, AW518681, A1612765, AW167921, BE788957, AA858007, A1200605, AW169759, A1077309, BE090217, AL535490, A1369853, BE881962, H46722, W85747, A1262289, A1356476, AV700100, A1311852, AA806683, AA918365, R97599, A1243252, AL516058, BF240998, AA844242, AV703387, A1174198, A1962988, A1679624, AW872809, A1521513, BF907716, BF030306, AA405762, BF222180, A1910100, AA558444, W07308, F28565, AA826775, AA631052, W85678, W94772, A1076383, N36207, AA280653, A1301845, BE139473, BE544945, W95277, AA757571, AA155871, W74408, AW117307, A1831139, AA086069, W72883, W69193, AA482654, A1131242, BF679007, AW802481, AW798113, AA156157, A1346057, N73492, BE141371, N78628, A1246199, W85693, A1753173, AA449777, W94283, H47019, AA805947, W69138, BE544253, AA025350, A1368183, AA492317, A1952549, H52676, AA746223, A1311923, AA433902, AA836936, AA604026, AW473008, A1354703, AA045304, AW129194, H85413, A1038223, AA281457, A1493620, AA935752, AV740175, AW408264, AA385071, AA490333, A1367686, AV653715, A1920800, A1466324, H26098, AA137252, A1049935, H84787, A1801806, A1696074, AW023603, AA340878, AW798262, AA146888, A1022105, BE672781, A1192138, BG056867, T61842, H04802, R63081, H04906, W39088, AW316563, N99444,



HHFFL34	155	753230	1 - 2618	15 - 2632	<p>BC008488.1, L19437.2, X76228.1, AF285836.1, Y10936.1, AL162003.1, AB060837.1, AL110197.1, AL117416.1, AK027213.1, AB044547. 1.</p> <p>BE904333, BE793888, BE878174, BF526368, BF342728, AW958460, BF342223, BE744311, BE728360, BE269184, BE389774, BE728264, AA639278, BE348724, BF685026, BE275174, BF237991, AI913307, BE729585, BG122285, AW021154, AA599241, BE729928, BE700883, BE772076, BF568665, BE700891, BE818932, BF374312, BF330082, BF330070, BE700860, BE700890, BF330075, AW249358, AI128858, BG112722, AA657534, BF330069, BE700887, AW408042, BE180234, AW068020, AA310538, BF568975, AW073205, BF330083, BF372989, BE700929, AW751261, BF363307, BF330096, BF372993, BF330072, BF372977, BG260565, BF330060, AA045741, BF372995, BE700916, AW248940, BF330092, AF074667, BE772071, AV762783, AI753898, BG012246, BF330095, AA352967, BF363296, BE818937, BE772069, AL037632, AV762145, BF372990, BE538259, BF330098, BE707514, BF330088, AV764490, BE909125, BE541237, BG032943, BF363289, BG164166, AL048969, BF363293, AV722075, BF330099, AU119532, BF330063, AV700545, BF372988, AU117926, AW068268, AL044340, BG034591, AW962296, AV714931, AV718718, BF330055, AI457389, AV719402, AV720570, AW963982, BF828714, BG028665, AA984258, BF826830, BF330078, AV759046, BF678427, BE818978, AW407562, BF330073, BE796439, BE396893, BF330057, AL135698, AA577824, AV719941, BF744954, AA284247, AA504646, AW965008, BF679792, BF346320, AA608588, BF330066, BF841650, AV700498, AA680243, AV699393, AW847118, BF673854, AA608612, BE541321, AV700663, AL135377, AW405593, AI732120, AL515875, AV760723, BF372992, AW188427, AI132963, AW962194, AW762693, AA526787, BF363288, AA487475, BF330089, BE004187, BF213459, BE154495, AA328000, AA362575, AA355142, AK027699.1, AK027850.1, AC008764.7, BC007731.1, AK024313.1, Z83840.7, AL137162.25, AC005839.1, AC004655.1, AL022322.1, AL050349.27, AC005781.1, AL023803.3, AL033519.42, AC004000.1, AC011737.10, AC006001.2, AP001726.1, AC007686.5, AC005522.2, AC008622.5, AC010311.8, AC000070.2, AC010203.13, AC013717.8, AC004797.1, AL031577.1, AC002544.1, AC068533.7, AL139317.5, AC019171.4, AC020558.4, AC006241.1, AL034423.21, AC019205.4, AC010378.6, AC011469.6, AC004253.1, AL035587.5, AL109952.15, AL020997.1, AC006511.5, AC007009.2, AC005225.2, AP003357.2, AC009144.5, AP001208.3, AL133545.10, AL021155.1, AC010618.7, AL049872.3, AL159168.15, AP000555.1, AL109752.13, AC068799.14, AC016776.6, AC008440.8, AL132838.4, AC006312.8, AC026172.3, AC002551.1, AC000353.27, AL096841.6, Z69917.1, AC006329.5, AL158040.13, AC079602.15, AL391827.18, Z93015.9, AC073539.3, AC002310.1, AL139809.16, AL136137.15, AC084865.2, AC011485.6, AC008745.6, AC004824.3, AC010458.5, AC004859.2, AC006468.9, AL357314.11, AC008626.5, AL445248.7, AC002115.1, AC006345.4, AJ277546.2, AC024078.4, AL354720.14, AC007546.5, AL109825.23, U91326.1, AC005231.2, AL049636.22, AC007421.12, AC005519.3, AP001748.1, Z93244.1, AC011495.6, AL024498.12, AC005041.2, AC007384.3, AC072052.6, AL109743.4, AL161626.20, AL136313.27, AP000359.1, AC011811.42, AP000689.1, AC011489.6, AC007564.9, Z85987.13, AC009123.6,</p>
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HHFFS40	156	824059	1 - 1802	15 - 1816	<p>BE877462, BF792909, BG260156, BG179110, BG112928, BF980559, BE544254, BG170563, BG107623, BF345994, AI763152, BE566242, BF346074, BF672687, AW299766, AI809063, AI658640, AW956747, BG256039, BG255904, AA630311, BE958056, BE873360, BE858485, AW072428, AW590087, AW996985, BE786419, AW963580, BF694200, BE565358, BF669441, AI521984, BF210963, BE564370, BG254405, AA554914, BE877693, BE872103, AI802337, BF242746, AA837003, BE674128, AA704063, AI697970, AI360303, AA676411, AI335019, BF940184, AA758569, AI341577, AI368085, AA976338, AA131990, BF594262, W52093, AI400190, AV655671, AA776953, AI720984, AI969963, BE538461, AI652576, AI924939, AI281274, AA610809, BF999637, BE540644, BF185031, BE564453, BF217183, AA599513, W60435, AI364496, AA622238, BE564859, AA173574, BE564942, AW181884, AA486013, AA452454, AI377701, H57481, AA775104, AA809861, BG110906, AI096469, R22549, AI948687, BG170098, AW467467, BF666042, AA136404, AI914432, AI952665, R72480, W19427, AI651051, R63250, BE768905, AA532466, BE564416, N92774, BE866100, AA487194, AA191014, AA436377, AA419582, N24149, AW072184, H99384, AW962785, AW731695, W52957, AA85982, AA136214, AI000422, AA885090, R73256, AA721779, W59973, AW273180, AI969516, AW996746, AA648637, AW572880, H26458, AA775095, R93450, AA721131, AI866701, BE929433, BF185491, AW129228, AW181995, R80927, AA629087, AV725677, AA486839, AA809868, R64668, R63022, BE247146, BF434557, AW381266, AW129216, D79097, BE925523, AA612598, R93403,</p>

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HHGCS78	157	634605	1 - 561	15 - 575	AA523300, AI962903, AA528118, BE858430, AW083553, BE858714, BE893836, AI190409, BE856210, AA769649, AI693556, AI366045, AI609800, AI337942, AW769813, AA613831, AI051792, BE874678, AI799232, AA682810, BE769324, AI810459, BF689177, BF593003, AA705587, BE896233, AI421592, AI421946, AI421527, BE731882, BE855826, AW817923, AI962361, R79580, AA581733, AI342639, AA649978, AI984920, AI624953, AA682704, AW802785, AL119863, BG163618, AL120853, BG029667, AW059828, BF814420, BF792961, AI358701, BF904265, BF338002, AL134259, AL042627, BF970658, AI815855, BG033723, BE393551, BG180996, BG026447, BG114104, AW827206, AV682264, AW411235, BG165051, BF970768, BF970652, BG030364, BF692486, AL038445, AW827103, AV708893, AV709314, AI334445, AV656478, AV684604, AV755884, AL041772, AL039086, BF752245, AV727029, AL043070, AI538764, BG181012, BG058150, BF854113, AV714274, BE876049, AV713662, AV756026, AV647773, AA100772, BG122481, BG105895, BF924882, BE895585, AV729189, AL048656, BF726207, BG113224, BG256880, AL041150, AI312428, BG112718, AV682791, BE966479, AI932794, BE966699, AW129271, AW827227, AW169653, AA508692, BF527014, BF971016, AA853213, AL046463, BG151388, BG105473, BE874133, BF969126, AL036980, AA853539, AL119791, AW301409, AV648263, BG260037, AI073952, BE785868, BE965067, AW238730, AW020095, BF343286, AL045266, AL513907, AI538342, AW827203, AI568114, BE885353, BF752836, AI309401, AL514627, AI784230, AW022682, BF970449, AI554343, BF032768, AI637584, BE885490, AW673679, AI284517, AI932915, BF921103, AI335426, AI348777, AW172723, AI791396, BF312128, AI922561, BE018711, AI344785, BE826053, AV681848, AA420758, BE964614, AI818574, AI671642, AW265004, AL037454, BG027082, AL038605, AW163823, BG029086, BG164558, BE172689, BF061283, AL036274, AV655645, AV647118, BG178689, AI340511, AV682466, AW161579, BE965724, BE779152, BE881005, BG112879, AA427700, AW079818, AI783504, AW827289, BE047852, BF339322, BG029053, BG168185, BE965330, AW238688, BF313411, BG260187, AV755484, BE047952, D50977, N99092, AL042400, AW410969, BG109140, BF672397, BE965192, AW834302, AI866573, AW806761, AL119836, BE837422, BE963838, AL037582, AL037602, BF798503, BF753013, R36271, AW268067, AL079963, AI335208, BG249582, BG179993, BF904193, AI491852, BF968027, AW302992, BE875407, BF038804, AI499986, AI630252, BE965481, AV715359, AW149092, AV743631, BE884296, AV733385, AV758087, BG107410.

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HHGDT26	158	658692	1 - 1570	15 - 1584	AA016083, H38909, H38821, T98933, T98978, AA644090, AA643784, AV700958, AI192440, AL046311, AW961848, AV699675, AV758870, AW408756, AA565911, AW189113, AI275982, AI281881, AW023111, AV761107, AL132986.4, AL020995.14, AC006537.1, U96629.1, Z85986.1, AL359272.9, AL121594.6, AC008450.5, AL139182.24, AF001549.1, AL049829.4, AC005940.3, AC015977.9, AL137000.6, AP000893.5, AC005180.2, AL137100.4, AC006120.1, AL049709.18, AL024498.12, AC008403.6, AC008610.6, AC084864.2, AL035419.12, AC007707.13, AC004990.1, AL096700.14, AL132712.4, AL355392.7, AC009144.5, AL357515.26, AL138720.19, AL121900.26, AC022087.8, AC011484.4, AC002319.1, AC005011.2, AL122021.3, AL138752.5, AC008622.5, AL050341.18, AL157791.4, AC022217.5, AL031311.1, Z98044.13, AC003684.1, AL136985.11, AC005049.2, AL121899.37, AC011469.6, AL356115.9, AL445465.10, AC009812.17, AL121949.13, AC007969.3, AP000501.1, AL049569.13, AC004840.3, AL049779.6, AL022067.1, AL390241.19, AC084865.2, AL133279.7, AL008726.3, AL162417.22, AL136304.10, AL445483.13, AL359792.3, AC007374.6, AC008812.7, AL121928.13, AL137230.3, AL031775.1, AC005088.2, AC004813.2, AC008946.6, Z85996.1, AP001469.1, AC020716.3, AC005756.1, AL096701.14, AC008556.5, AL357752.19, AC011455.6, AC025166.7, AC002316.1, AC005052.2, AC011449.6, AJ277662.1, AL050318.13, AC005077.5, AC010422.7, AC005844.7, AC009123.6, AC008738.6, AC005625.1, AF030453.1, AC005220.1, AL138920.11, AC010605.4, AL117694.5, AC004000.1, AL121582.19, AL031728.12, AC005082.3, AP000471.2, AC005514.1, AC026218.5, L78810.1, AC007055.3, AL162458.10, AC008044.4, AC008551.5, AC011443.6, AC004659.1, AC018644.6, AC020904.6, AP000925.5, AL035398.19, AL136961.19, Z93023.1, AC008040.7, AC073184.5, AE006463.1, AC004491.1, AC018816.5, AC005722.1, AC021016.4, AL132780.5, AC026464.6, AP001717.1, AL023553.5, AC020906.6, AL162424.20, AC004019.20, AC013414.7, AL109935.39, AL359983.7,



					AC007318.4, U15422.1, AL139415.10, AC008848.7, AF108083.1, AL354928.9, AL109825.23, AC018711.4, AC009364.8, AC009077.7, AC007425.16, AC004531.1, AC010358.5, AP001726.1, AL139022.4, AC010553.6, AL049759.10, AL031283.26, AC004099.1, AC005527.3, AC002351.1, AC011445.6, AF314058.1, AC003663.1, AC004222.1, Z95115.1, AL031680.20, AL031848.11, AC005031.1, AP000167.1, AC021036.5, AC010543.8, AC008134.3, AF260011.2, AC012318.7, AC090883.1, AC004033.3, AC004216.1, U95090.1, AC019066.6, AL358815.12, AC022201.4, AC008372.6, AC006449.19, AC002352.1, AC002390.1, AC010473.5, AP000689.1, U95742.1, AC008440.8, AC005486.2, AL354864.16, AC005225.2, AC004797.1, AP000113.1, AP0000045.1, AC005529.7, AC004675.1, AL030996.1, AL445687.5, AL157712.13, AC002302.1, AC004922.2, AC011895.4, AL138885.21, AC000025.2, AC011742.3, AP000345.1, AC005102.1, AF053356.1, AC018663.3, AP001748.1, AF134726.1, AC004605.1, AC090939.1, AL449223.7, AL109840.24, Z98742.5, AL031685.18, AC007298.17, AC005581.1, AC008733.7, AL589988.6, AP000744.4, AC037475.9, AL355336.15, AC005067.2, AJ246003.1, AC010319. 7.
HHPFU28	159	824573	1 - 1824	15 - 1838	BF035537, AW069711, BF672434, BE883242, AL656112, W31606, W07084, AI272643, AW170657, AA166968, N7917, AW513307, W15523, C75056, AA167046, AA228908, AA228890, AA856550, BE540895, AA856549, AA883954, AI636144, F16318, AW275622, F15813, AA629229, AW979328, BE825903, AA683173, AW954221, AV725561, AV703624, AW962970, AV646649, AB002332. 1.
HHSBI65	160	801910	1 - 1430	15 - 1444	BE796723, BE541989, BF057278, BF063128, AI990159, AW003665, AW300907, AI738928, AW246641, AW594304, AI521438, AI394059, AA994208, AI130030, AW083104, AA811418, AA974513, AA761013, AA765652, AI583684, AI748894, R67183, AA483531, AA836959, AW236517, H29649, BF115987, AA747573, AA434041, AW845318, T75095, H29565, BE742632, BE386466, AW196291, AI608701, F10461, BE385745, AI474368, BE502390, BF115569, BG236177, BG230771, AI825041, R54830, AW117865, R38529, AA370939, R43648, AA215393, BE552433, AV749164, BF112242, F13491, BF058839, AI087969, AA215394, AI475583, AW450912, T25126, AA434109, AK026541.1, AF174592. 1.
HHSDI53	161	862028	1 - 1263	15 - 1277	AW994394, AW151201, AW865905, AW865900, AW865898, AW866014, AW865891, AI755214, AW500684, AI754567, AI754105, AW576251, AL042373, AW613805, AW069227, AI923052, AI733856, AW341978, AA847499, BE062476, BE062478, AW576191, AW023111, AA420546, BG059972, AA449997, AW576490, BF911056, BF526964, BF828714, AV763026, AV763058, AW327624, AV732057, AA579179, AA410788, AI358712, AI634187, AU147162, BF691714, AW979087, AU146620, BE062545, AW516255, BF771349, AW328202, AW500029, BG250044, BE676019, AI792529, AW131356, AV703785, AW963663, AV763550, AI249688, AW958962, T74524, AW502873, AV695478, AW474168, AV762430, AI457313, AA828834, AI080307, AI962030, AV759518, AW275432, AW819125, AW026305, BG110162, AV730440, AI421950, AA513851, AI419337, AV730986, AW851405, AU144540, AW964231, AV741914, AV760508, AI038304, BE968744, AL135377, AI636734, AI361090, AV732950, AV754716, AV762009, BG036665, AI345654, AA578621, AW970896, AW021886, AA515048, AI569100, AA557911, AA501461, AL109936.10,

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HHSFC09	162	801911	1 - 517	15 - 531	BE/747415, AW081854, BE208811, A1924623, A1972073, BF663852, A1745446, A1978809, AA938156,

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HHSGL28	163	801912	1 - 1079	15 - 1093	BG171741, AW173204, BF591281, BE046519, AI434116, AI924007, AI376683, T32429, AI167402, AI673386, AI264073, R54811, R60329, AA483538, BE007793, AW891793, AI276421, AA804437, Z39301, R55806, H22928, AW514504, F03372, AI864226, AA081967, AA905269, AW600295, AW149706, AW891812, AC020584.9, AL049466. 1.
HISBA38	164	561711	1 - 1044	15 - 1058	AA465219, AW968392, AA465303, AL042753, AV759518, BF868994, BG029528, BF725761, AI963720, AL037683, AI129746, AL041924, AV682003, AV763460, AL138455, AL079734, AV757289, AI282253, AA669155, BF827410, BE252421, AL042853, AV760391, AA760655, AL079447, AV760389, AV762395, AA551105, AI049643, BG164617, AL137020.13, AC006581.16, AL122023.3, AL022322.1, AC007436.1, AC004706.1, AC068722.6, AB045357.1, AL035552.9, AP002532.1, AC022324.5, AL121869.19, AL109752.13, AC020559.4, AC008901.5, AC006017.2, AL354943.9, AC073897.6, AL353752.6, AL121823.12, AC005798.10, AF117829.1, AC018719.4, AL138832.10, AC010722.2, AL358612.8, AL163206.2, AL138879.10, AC090710.16, AC005250.1, AL365222.24, AL163213.2, AL133517.11, AP000493.1, AC005539.1, AL139150.12, AC003029.2, AC008766.4, AC009316.3, AC005002.2, AL133244.1, AL137818.3, AL031433.4, AC010081.4, Z97985.16, Z94722.1, AL590611.7, AC025253.20, AL137918.4, AL121652.2, AC073881.3, AC004998.2, AL355834.4, AL450345.6, AL163201.2, AL137840.12, AL049835.3, AL355143.17, AC006466.3, AC002457.1, AL132827.2, AC090957.1, AL049697.9, AL109939.13, AL133373.5, AC068723.5, Z98754.1, AL356278.8, AL355535.14, AC087315.21, AF212831.2, AL023876.2, AL359234.4, AL390205.17, AC007683.5, AC010140.3, AP002448.3, AC034148.9, AC027129.5, AL357272.10, AL023279.1, AC012372.4, AL022152.1, AC006287.1, AC006313.1, AC019155. 4.
HJMAA03	165	824062	1 - 651	15 - 665	AW304711, BE677684, AW959142, AI290480, BF090788, AW571568, AI092037, N55492, BF090740, W05027, BE714108, N76979, AA361785, N70383, C02489, BF987194, BF087284, BF087325, AA732983, AI348883, AV682863, AW305097, AV691827, AL038473, AW265139, AL442128.7, L44140.1, AC004867.5, AC004166.12, AC009996.7, AL135905.6, AP000087.1, AL158158.14, AC018809.4, AF190464.1, AL391839.9, AL035684.25, AC007172.6, AP001694.1, AC009753.5,

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HJMAV41	166	862029	1 - 1003	15 - 1017		AL519996, N99345, AL528860, BF967736, AL528859, AL532599, AL538083, AL538011, BF527376, AL535063, BE967933, H21178, AA424063, BF529494, BF507682, AW297516, BF342788, AI422769, AI185878, AI124739, AI865987, H21121, AI816490, H18325, H21179, AI703250, AW592816, AI784327, T03789, AI369670, AA378946, H41697, H21831, H23884, BG056097, R59872, R87479, R90915, H21832, AI174201, H41664, H21166, AI519997, H41609, AL533018, AL533068, AL533347, H46526, H43588, R50960, H43587, AW162319, H18324, T23814, AA378559, AA378947, AW954445, D54991, BE504938, AA424113, R40163, Z38418, AL534514, AL537105, AL538012, AW156888, H46527, BF945915, AL534591, R38431, BF904209, R41229, BF983417, AL538084, BE967687, AF186264.1, AC003112. 1.
HJ MAY90	167	793678	1 - 2872	15 - 2886		AL528466, AL515937, AL515936, AL532237, AL525124, AL532236, AL515028, AL524995, AL528367, AL528434, BE250695, BE561358, BG111806, AV721549, BE878048, BG259396, AV704379, BE081006, AA195932, BG254477, BE514039, BG179611, BE561069, BE293120, AW957107, BG106045, AV704489, BE868130, BG178706, BE890558, BF986395, BE562551, BF530689, AW582566, BE388805, BE261883, BE276222, BF308989, BE513443, BF979840, BG037058, AW361920, AA126447, AI688244, AI299929, BE675680, BF575980, BF897807, AA772339, BE559738, BF792461, BG249935, BE744995, AA480039, AI333993, AA780383, AI972665, AA602978, AI084506, BE905864, AA196096, AW069482, AA418817, AW369988, AA625213, N99166, BE513718, AA902390, AW055168, AI198937, BF060744, AA479634, AW327284, AW511171, AI668787, W49832, AI261876, AW964812, AW026236, AI129281, AI369910, BF183828, AI050728, AA176446, BF750546, AW236223, AA428220, BF219396, AA603339, AI040239, AI276088, AI039488, BE313610, AA025636, AI275452, AI332679, AI739314, AW578583, AA429340, AI300107, AA428816, AA600274, BF811534, BF918058, AI080527, AA468612, AI332678, BF856876, AW612467, BF846350, AA630403, BF851981, AA577531, AA130361, BF852345, BF856862, AA047364, AI302165, BF856860, BF852036, AA040226, AI984693, BG179198, BF858045, BF852198, BF853425, AW578582, BF851975, BF852228, BF852053, BF856867, BF852194, AI475596, AA111857, AI400140, AA188607, AA551765, BE392844, AI393097, AI207817, BF846296, AI222407, BF852152, AA622007, BF917400, N34631, AA831984, BF851984, BF852111, BF852259, AI492824, BF852635, AI095343, BF852087, AI658926, AA244202, BF852016, AV653019, AA025626, BF852362, AA970884, AI419571, AA039861, BF856865, BE301206, BF095128, T56235, BF852817, AI077900, AA224539, BF852107, T66254, BF856864, BF856873, AA748314,

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HJPBE39	168	801960	1 - 1284	15 - 1298	AL519852, AL527399, AL515498, AL527358, AL529347, BF792443, AL515497, BE730880, BE277609, BF000393, AI962602, AL525722, BE730832, BE384867, BF686529, BE795039, AW263053, BE888955, BF304919, BF315024, BG031037, BE389217, BE049408, BE390060, BF984396, BE388113, BE348265, BF973110, BE266542, AI671396, BE867694, AI393247, BE311766, BE207532, BE544851, BE397321, BF125789, AI688503, BE616765, AW084179, BF036778, AI215805, BE276965, BE274028, BE279716, BE220591, BE886536, AV721055, AA666401, BE730577, BE266808, BE787679, AI333898, BE391366, W16684, AW952000, AL529348, BE385658, AW448966, BF307353, BE302707, AL519851, BE265722, AA186873, AW769101, BE615964, AW246258, AW235139, BG025833, AI983116, BG119203, AI767753, BE384303, BE273943, AA312411, AI948835, AI312519, AA733032, AA838388, AW673726, AW672758, N79531, AI968691, AA055433, BE263201, AI370568, AW615793, AI745361, AW675422, BE328771, AW135640, AI691056, DI11879, AI352285, AW272223, DI1592, AW241457, AI568807, D11608, AA583830, BE263003, BF678146, W27625, AA877583, AA099966, BF349610, AW673090, T30363, AA759230, AW672670, BE925766, AA641441, BE937913, AA188528, BF240905, AI942377, BG025864, AA055004, AW999828, AA362916, BF790356, BF332109, BC004169.I, AP001486. 4.
HJPBK28	169	638191	1 - 975	15 - 989	AL514305, AW293236, AW293727, H05931, AA641023, R38502, AI866873, AI401672, BF541631, AA809622, AA744709, AW300626, R60656, AW300632, AI559711, AW300658, BF591678, BF059502, AA433907, BF477999, AI143872, BF111052, AA923560, AI023411, AI580975, AW192719, AW080271, AI493147, AW242303, AW026654, AI569455, AA916462, AI281175, AI278657, AI419344, AI278903, AW305204, AI863945, BE856987, AA947586, AI954274, AI825314, BE551611, AU151920, AI4222001, AI468214, BF061087, AI769184, AU159402, AI921752, AI984143, AW117197, AA446546, BE503412, AU153554, BE501613, AI656177, AI075679, AI459572, AI739249, AU158932, AI962781, BE888552, AI340045, BE328347, BG120198, AW952038, AA933635, BF870463, BF828427, BE620781, AA304007, AA446399, AL137969, BC004415.I, BC007774.I, BC006291.I, AK023216.I, AK027624.I, AB040953.I, AB045381.2, AF216494. 1.
HJPC08	170	840365	1 - 865	15 - 879	AI655312, AW975835, AI653243, BF059498, AA731744, AW590208, AU154664, AI671173, AI669341, BF970492, AA704870, AI654412, AI889336, BE966747, AI739117, AI168283, AA781842, AI203090, AW383906, AW103151, AW589549, AW074368, AA600977, AI014854, AA179845, BE775064, BE090424, AA630744, AV714379, AW857113, AW075406, BF982048, AA736497, AA789069,

HKABU43	171	838573	1 - 1905	15 - 1919	AW770138, BE696241, BE622755, AW074752, BE928343, BF762364, AI904387, BE539952, AA471345, AF153329.1, AF070672.1, AK024804.1, AK025790.1, AC004826. 3. BG035820, BG163860, BE779136, BG032640, BE546300, BG251357, AI890545, BF798002, AW957817, AW957894, BG164329, BE897914, AI064868, AW439699, BE868957, AI628884, AI538687, BG117638, BE075026, BE075028, BE877956, AI90859, AW241402, BF057808, AI962251, BE672376, BG254061, AI655998, W76094, AW593934, AW206368, AW070698, BF592891, BF855200, AI913939, AW242743, BE892303, W72889, AW510467, BE502137, AW852201, AW468485, AW242300, BE073158, BE073145, AI370901, AA076346, BE075023, BF761114, AI269861, BE927867, Z19251, BF229820, AA912859, AI962408, AA49269, BE869764, AA449405, AI125399, AI766912, BG230901, BF761369, R82858, BE927921, AI651447, AW852191, AW874171, AA313460, BE268347, AI440431, AW603030, AA322088, BE503487, AA373986, BE927954, BE677880, BE816387, BF679224, BE816422, BE927027, BF514420, BE297845, BE390905, BE535739, AV762904, AA564527, H29863, BE743929, AA369997, AA370398, AW957044, AA852197, AB018262.1, BC003633. 1.
					BE620537, BE887011, AI884488, BE551571, BF678070, AA805648, AL036413, BE544147, H09313, BE866156, BE620104, BF674854, AA133345, H48651, AA490066, BF529583, BF678901, AA129731, AW468618, H48486, AA563893, BF693968, BE866045, AI014811, N34243, H90814, BE565640, BF677892, AW303196, AW274349, AW301350, N25644, AW965008, AL138265, AA521399, AI284640, AV760777, AL046409, AA521323, AI754955, BF668217, AA581903, AV733830, BG249643, AL042853, AI334443, AV760937, AV762098, AW502975, AA610491, AV762571, BG236735, AL119691, BG222267, AV759437, AL138455, AW513362, AA720702, BF592311, AV762139, AV761294, BF725504, AV735495, BF592200, AL046205, BF965007, BE139146, AA610493, AW327868, AI281881, AW407578, AV725431, BE061906, AA877817, BG109996, BE154617, AW576391, AV710774, AW270270, AV652936, AI312309, BF942454, AL042753, AI355206, AW630298, AV740801, BE872393, AV713243, AV742057, AW833862, AF074677, AI133164, AW419262, AI457397, AI696962, AV760039, AA665330, BF940837, AV759172, AA623002, AA587604, AW662543, AV735239, AW265393, AI890348, AA745104, BF679274, AL120269, BE895987, AW265385, BE154719, AV760571, AW088846, AA610783, BF816072, AW872676, AV729809, BF827410, AA653618, AV759382, AI865905, BF679256, AI610159, AV761155, AV757607, AL048925, AA503473, AV761637, AL120687, AW501386, AI254615, AA572713, AW080811, AV702857, BE049139, AW973397, AW073470, AV763216, AA765170, AA531372, BF541116, AC002519.1, AC011477.5, AC000378.1, AC073539.3, AF134726.1, AC009032.7, AC012476.8, AL356915.19, AL157903.15, AC008770.6, AF067844.1, AL139382.12, AC007114.7, AC007324.55, AL080243.21, AL022323.7, AC022493.12, AC009412.6, AC005412.6, AL121601.13, AC011740.7, AC008554.7, AC013264.4, AL022302.10, AC005694.3, AC022432.4, AC005988.1, AL353715.21, AC005154.1, AF217796.1, AP001717.1, AC010553.6, AC005089.2, AP002906.2, AC005527.3, AL445220.5, AC008543.7, AL359457.12, AC010880.8, AL135901.23, AL049843.18, AF015151.1, AC011749.2, AC004019.20, AC009244.24, AL445928.8, AC002470.17, AC074391.5, AP001718.1,
HKACI79	172	853361	1 - 1167	15 - 1181	

					D83989.1, X54181.1, AC002347.1, X54178.1, Z97054.1, AC005529.7, AC078899.1, AF053356.1, AL354707.17, AC007066.4, AC004832.3, AC020904.6, AP002814.3, AC003007.1, AL118520.26, AC006362.2, AC026770.6, Z93241.11, AP000502.1, AL109804.41, AL049795.20, AC026185.3, AL353135.32, AE006465.1, AC007005.3, AC005722.1, AC008775.6, AC005632.2, AL008716.1, AL158830.17, AC009069.3, AC004491.1, AL353807.18, AL365225.12, X53550.1, AL161725.13, AL390205.17, U67221.1, AL078477.5, AC010465.7, AC011455.6, AP000141.1, AL031281.6, AC000041.2, AL354720.14, AP000032.1, AC021752.5, AC007011.1, AC011461.4, AF317635.1, AC002395.1, AC027644.9, AC025457.5, AC010223.5, AP001720.1, AC015801.25, AC007345.5, AC005678.1, AC011452.6, AL109623.9, AC004041.1, Z86061.1, AL020995.14, AL049557.19, AC034200.6, AP000501.1, AC073651.23, AP000907.5, AC016637.6, AC002126.1, AL138885.21, AL162430.15, AL359713.25, AP000255.2, AC013356.8, AF123462.1, AL031662.26, AC010620.4, AC005531.1, AC002045.1, AC007878.2, AL136179.15, D87675.1, AC007237.3, AC006449.19, AL049776.3, AC013449.8, AC002531.1, AC011472.7, AL512484.13, AC004884.1, AL512883.5, AC008567.4, AC020663.1, Z98745.1, AC008602.6, AL157938.22, AC027319.5, AB023049.1, AC008983.7, M37551.1, AC006101.3, AC004848.1, X55931.1, AP000354.1, AL137179.14, AC005229.1, AC000072.2, AC009789.21, AC004816.1, AL121992.24, AC007336.5, AP000065.1, AP000043.1, AC009274.9, AL390241.19, AC026776.4, AL121972.17, AC018711.4, AL357518.15, AL122035.6, AL050349.27, AL031286.1, AC011443.6, AC004963.2, AC019099.6, AL050318.13, AL121898.23, AC010643.5, AP000135.1, AL450465.12, L77569.1, AL445222.9, AL352978.6, AE006462.1, AL138759.20, AL031311.1, AC008079.23, AL121928.13, AC008537.5, AC068724.7, AL132712.4, U91323.1, AL451126.18, AC019215.4, AL353579.17, AL583856.6, AC008795.6, AC007881.4, AC011467.7, AL136418.4, AL139054.1, AL034351.1, AC008736.6, AL160273.9, AL139385.12, AC005696.1, AC000025.2, AP000031.1, AC008760.6, AL033383.26, AC007620.30, AL136000.4, AL157789.6, AC004990.1, AC007957.36, U95742.1, AC004826.3, AL035681.13, AC090939.1, AL096700.14, AF015156.1, AL035072.16, AC006064.9, AC024085.5, AC008622.5, AL031584.1, AL161630.12, AL158040.13, L78833.1, AC010422.7, AC005901.1, L47234.1, AC005940.3, AC004875.1.
HKAFF50	173	790192	1 - 1787	15 - 1801	BF987048, AW993075, BG106272, BF350112, BF847761, BG057131, W39473, AI373481, AW295936, AA826188, BF116045, BF155043, BF058640, AA905323, BF326859, BF155071, AI572142, AI023661, AA035149, BE242411, BF436575, AI559476, BF370930, AW801318, AW815005, AI801148, AK027339.1, AK027456.1, AC010200.7, AC007249.5, AL158207.15, AF312915.1, AC008738.6, AL022336.1, AC005015.2, AC004685.1, AC005089.2, AC005952.1, AF038458.1, Z98742.5, AL138836.15, AC003662.2, AC016968.24, AF288742.1, AL359091.10, AC008521.5, AC002425.1, AC008745.6, AC018738.4, AL450325.5, AC018663.3, AL356113.8, AC005412.6, AC006275.1, AL117381.32, AL049569.13, AL022721.1, AC078962.30, M34158.1, AC007374.6, AC004491.1, M31061.1, AK000932.1, M33764.1, X16277.1, M81740.1, AC004166.12, AL353653.19, AC018462.4, AC006511.5, AC005017.1, AL079295.1, AL109657.8, AC003982.1, AC006312.8, AC005500.2,



HKGBF25	174	738797	1 - 1993	15 - 2007	AC022154.3. AV763026, AV763038, AA410788, AU147162, AI133514, AA449997, AW805539, AA811741, AA713765, AW002831, AA488689, BF769368, AA721645, AI380617, BF528591, AU153296, AI342183, BE140949, AI056177, AU157093, BE178231, AW571963, H73550, AU150634, BE178064, AI590458, AU153624, AI278847, AU151428, BG250286, AA587516, AW075132, AA456924, AA228778, AV762633, AA922351, BF834843, W60612, AW805547, BE142845, AA176604, AI538491, AI434037, AA745383, AL042310, AU154011, AI690497, AA586866, AI590499, AV741914, T06598, AA808173, AA845659, AI054030, AV760918, AW978041, AL134418, AI355080, AW067788, AW504299, AW068008, AW068007, AV738383, M37468.1, AL138752.5, AC007298.17, AC040160.4, AC008812.7, AC008521.5, AP001712.1, AC008766.4, AL035587.5, AC009068.10, AC087071.2, AC011462.4, AC009247.12, AL160237.4, AL035634.7, AC007000.2, AC011445.6, AC008397.7, AC000118.1, AL161911.17, AL133260.12, AC006312.8, AL121899.37, AC005522.2, AC007842.1, AC007993.15, AC007956.5, AC011295.3, AC005015.2, AC011449.6, Z97196.1, AL121926.24, AC004253.1, AC005884.1, AF196972.1, AC022007.3, AC007676.19, AC003982.1, AC004686.1, AC011742.3, AL122035.6, AC018809.4, AL138743.5, AL359986.15, AC004217.1, AL353807.18, AC078818.19, AL161731.20, AJ400877.1, AC006483.3, AC022392.4, L78833.1, AC007052.4, AL096700.14, AL049569.13, AC031668.23, AC026391.6, AC091637.1, AL050317.16, AC007597.3, AC003043.1, AC006001.2, AC025588.1, AL161656.20, AC007679.4, AC005988.1, AC018682.4, AC005940.3, AC005399.19, Z98751.1, AC005004.3, AC005081.3, Z85986.1, AF053356.1, AL160166.10, AL583856.6, AC026770.6, AL031230.1, AD001527.1, AC004983.2, AL031584.1, AL138832.10, AL137797.9, AC024561.4, AL355886.4, AC018868.4, AL121658.2, AC074013.5, M63796.1, AL161893.24, AC004841.2, AC011736.4, AC006994.4, AL121972.17, AP000424.3, AL391280.15, AL034380.26, AL022316.2, AC006337.4, AL121656.2, Z83822.1, AL050349.27, AC010311.8, AC010616.5, Z97054.1, AC011484.4, Z99716.4, AL354696.11, AF243527.1, AC007225.2, AL050341.18, AC011450.4, AC006013.3, AP001717.1, AC005412.6, AC010077.1, AC068799.14, AC011247.10, AC018695.6, AC006006.2, AC002350.1, AL445222.9, AL049709.18, AL132777.4, AC007707.13, AP001725.1, AC004263.1, AL096701.14, AC067941.7, AL121936.17, AC011500.7, AC005624.1, AC005103.3, AC004408.1, AC010913.9, AL031597.7, AC009144.5, AL035407.15, AL031005.1, AL117381.32, AC005332.1, AC008481.7, AL035419.12, AC003950.1, AF168787.1, AL158040.13, AL354815.10, AP001718.1, Z85996.1, AF207550.1, AP000193.1, AP000131.1, AP000209.1, AC020552.4, AL133243.1, AC003958.1, AC009480.4, AL355137.23, AC005355.1, AC072052.6, AC004805.1, U91323.1, AC005480.3, AC011497.6, AL353706.6, AP001767.4, AC002316.1, AL357515.26, AL117337.25, AL162740.13, AC004890.2, AF047825.1, AC009570.13, AL031447.4, AL032822.1, AC007536.9, AC006597.2, AC007365.3, AL023876.2, AL008732.1, AL354932.26, AC005102.1, AC005080.2, AC002492.1, AF030453.1, AC008440.8, AL513008.14, AL162293.22, AC010724.6, AL031003.1, AL162430.15, AC005088.2, AL031657.5, AP000248.1, AP000117.1, AL096791.12, AC003665.1, AC010279.4, AC007382.3, U47924.1, AC024584.5,
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HKMLK03	175	734213	1 - 1035	15 - 1049	<p>TI6611, BE069852, AV704467, AW961606, AV708167, AW063362, AV762430, AW962942, AI061313, AV695709, AW9633895, AW963463, AA468319, AW966064, AV703573, AV702425, AA736485, AV704541, AI687343, AW960468, AW501806, BF475949, AL134330, AI130709, AA468466, AW474921, AV729337, AI537995, AC007014.1, Z95152.1, AP002851.2, AL022165.1, AC009269.6, AL157789.6, AL353140.12, AL121658.2, AC020901.8, AC025097.41, AC008280.4, AL121594.6, U95743.1, AL139022.4, AC034198.6, AL117380.28, AL133545.10, AL121653.2, AL354815.10, AL139824.22, AC004081.1, AC003692.1, AP000036.1, AC008812.7, Z84484.1, AL109798.19, AC003689.1, AP001695.1, AC073517.5, AC083873.3, AL139150.12, Z83838.2, AL590763.1, Z97985.16, AL359397.3, AC007938.1, Z98200.8, AL139405.11, AC016721.11, AL137229.4, AP001718.1, AC007538.5, AC007390.3, AC005412.6, AL121997.7, AL163247.2, AL121675.36, D87675.1, AL355796.11, AC005539.1, AC011005.7, AL049830.3, AL512325.9, AL035422.12, AL009181.1, AC020571.8, AL009172.1, AP003352.2, AL008626.1, Z98884.11, AL035684.25, AL159970.16, AL049832.3, AC002072.1, AC006334.3, AL133245.2, AC004817.2, AC016587.7, AC010748.5, AP001713.1, AC006112.2, AC009509.7, AP000555.1, AF003528.1, AC006512.12, AL354873.19, AL445466.9, AC079316.15, AC003684.1, AC010271.6, AL135927.14, AC007227.3, AC005040.2, AL135787.13, AC010789.9, AP001727.1, AL022067.1, AL034423.21, AL451107.6, AC009032.7, AF205588.1, AL139113.21, AC018741.3, AC011895.4, AL355497.14, AC012384.16, AP001748.1, U91321.1, AL118520.26, AP001629.1, AP002392.3, AC068319.4.</p>
HKMLM95	176	840367	1 - 1084	15 - 1098	<p>BF569997, BF969482, AW078713, AL135048, BF382693, AW954512, BE621842, AI540318, AA403127, AA176130, W72363, AI064705, BG168965, AW055210, BF694804, AA192766, BF126225, BE464942, AV712800, AI990841, N63055, AA583554, AA160795, BF940138, BE568899, AA670448, BF223879, AI127525, BF695100, AI620413, AI828512, AI433727, AA837041, AA627070, BE764626, AA861506, AI467844, AA825576, AA570546, AA156500, N73467, AI928287, AA780886, AI361333, H98773, AW891226, AW468979, AW891193, AI129623, AA995154, AI742729, BE149755, BF765155, BF796826, AI494004, AI079425, AA244009, AA782324, AI858721, BF941599, N23494, AA912653, AW891213, AA557355, AW947448, AI190082, W00578, AI131168, AA071490, AI623218, BE672562, AW891190, BE965653, AI744467, AW190295, BF941821, AI361982, AW796778, F24891, BF953854, AW891184, AW891191, BF690351, F24890, BE695653, AA516451, AA603322, T85018, AA102691, AA298114, AW004771, AA769023, AI276345, D25687, AW992461, R00279, H00869, BF132215, T99929, H81898, R71363, H00870, W74024, AI425114, BE167770, AW891215, Z28651, AI537435, AA431203, BE465030, T33976, AI701143, AA298607, AW452100, BG121955, T96534, AA342751, AI357553, R23713, BE617980, AI364811, BE816193, AA070736, AA431527, R52155, AA032280,</p>

					AI866774, T91971, AW891220, AA078290, R10695, R71364, H82075, F15546, BF955700, AA401854, H16720, BE008777, BE083237, BE618552, AI572767, T35852, BE963289, R26666, AA244038, BF893162, BE695648, R10784, H81897, AA298587, AW189743, AA077178, N56242, AW075352, R41326, AW890639, BE143160, AA093065, AA971831, AA382921, F21955, BF992961, BF991377, BF754599, AA093066, AW151670, AV712799, BC002446.1, AC006372.2, AB015798.1, AF090927.1.
HLD BG17	177	855953	1 - 638	15 - 652	BF002740, AW015349, AW172836, N51711, BE619681, AA620652, AA639043, AA447223, AA648349, AL048032, D62490, BE930019, AI973069, AI370576, AI889304, BF885813, AW975098, BF377527, BF885812, AI370615, Z41325, BF885814, R39086, AA658236, BE708124, AF131793.1.
HLD CA54	178	842190	1 - 1801	15 - 1815	BG112912, AI680879, AI963168, AW977776, AI952738, AI651547, BE645090, AI769668, N50827, AI803013, D80828, BF857476, N31562, BF879870, AA983652, D61091, D61491, D61010, AI057465, D60731, D80571, D80827, D60070, AI913096, BF002733, C15654, AI051765, D81061, D81737, BF858583, N21541, BF858581, AW235869, BF880812, D61025, AA811035, AA836603, D81334, D60410, R38233, D81070, C15355, D81320, BE700338, D80572, D80549, R38234, D80695, C15477, D60304, AW050458, BF093474, AI345183, AI251588, AA937912, BF057970, AI590024, AI499555, AL047301, AL514669, AI963463, BF038742, AI918554, AW080076, AI539774, AI798359, BE883591, AI866465, BG167830, AI815232, AI866691, AI801325, AI500523, BF812438, AI538850, BE885490, AI887775, AI582932, AW167983, AI590043, AI872423, AI284517, AI923989, AI500706, AI445237, AI491776, AI926593, AI289791, AW151138, BF811804, AI521560, AI889189, AW151974, AI285417, AI500662, AI623302, AI582912, AI539800, AW172723, AI284509, AI538885, AI889168, AI440263, AI927233, AW058275, AI866573, AI633493, AI434256, AI866469, AI434242, AI805769, AI888661, AI500714, AI284513, AI888118, AI285439, AI436429, AI859991, AI623736, AI889147, AI355779, AI371228, AI581033, AI491710, AI431307, AI440252, AI440238, AL047422, AI866786, AI567971, AI924051, AI610557, AI860003, AI431316, AI242736, AI539260, AI828574, AI887499, AL515067, AW151979, AI539781, AI431238, AI539707, AI702065, AI885949, AW194509, AW089557, AI559957, AI285419, AI521571, AI469775, AI932620, AI866581, AW074057, AL047398, AI567953, AI815150, AI446495, BG111767, AI867068, AI952433, AI889191, AI225248, AI358271, AI872315, AI282249, AI698352, AI371229, AI815239, AI500659, AI474699, AI371237, AI538615, AL042899, AW151132, AI804505, AI432650, AL042898, BF812963, AL042593, BF724817, AW129310, AI866458, AI952683, BF815930, BF981785, AL049341.1, AF205588.1, AL135791.12, AJ245587.1, AL133607.1, AK000489.1, AL133051.1, AL133084.1, AL133070.1, AL049423.1, AL133655.1, AL136765.1, AL136763.1, AL136781.1, AK000647.1, AC016951.9, AK000672.1, BC004196.1, BC006251.1, AK027221.1, S73498.1, AL096728.1, AL096709.11, AL133053.1, AL136825.1, AL133015.1, AL133608.1, AL133049.1, AL136830.1, AF212242.1, BC008875.1, AF114818.1, Y14737.1, AL080086.1, AB047819.1, AL136975.6, AC024028.10, AC007383.4.
HLD QU79	179	740755	1 - 1474	15 - 1488	BG256275, BE867624, BE907396, BE855521, BF034422, BF530803, AW959247, BE782005, AI126689, AL121446, AA757065, AW630129, BF768037, BE746763, AA206154, AA460401, AI276320, BF998689, AA295243, BE242732, BG035901, AL040350, BE242810, T86168, BF983867, W05088,

HLDRT09	180	830544	1 - 707	15 - 721	AA347337, BG252443, AI133502, AF064093. 1. AI866557, AA89696, U66673, AI653711, AW130629, AL530677, BF526233, AW468114, BG150565, BE855729, BG255222, AI632354, AL529262, AI672056, AI193721, AI149691, AL048367, AI201831, AI767058, AI364991, AW450832, AW510340, AW275893, AI150164, R49046, AA972284, AI917762, T19369, AL048395, AA954036, BE796997, W45334, AI695488, AW005652, AI867905, AW593521, BE550530, C20962, AW975426, AW772241, BE550612, AA715469, AF202366, BF857142, AI207097, AW205829, AA665913, AW072705, AI275314, AI252147, AI053412, BE042038, AI611493, AW086306, AI225259, AI335447, AI306279, AI336733, AI313009, AW074912, AW075200, AI284547, AI223483, AI340903, AI371626, AI224247, AI249854, AI611505, AI344093, AI613371, AI252683, AI250011, BE049031, AI275343, BE139666, AI311703, AI223583, AW302308, AI307540, AI313289, AI254993, AW073479, AI344172, AI223547, AI306197, BE857864, AI250312, AI251146, AI580534, AW302714, AW302804, AI254415, AI266765, AI305703, AI224293, AI306267, AI613374, AI432751, AI344229, AI053844, AI371955, AI334864, AI053823, AI311600, AI310544, AI580639, BE042235, BE042295, AI311615, BE041253, BE042122, AI305591, AI310294, BE043287, AI224692, AI890550, BE043496, BE041798, AW302103, BE139398, BE139130, BE138588, AW072736, AW301907, AW470468, AI054318, BF718321, AI345502, AI432745, BF718329, AI305392, AA947610, BF055794, AI306075, AI311211, AW664349, AI624279, AL119863, BF904244, AI917252, AI829327, BF672397, BG121222, AI612885, AI280747, BE672647, BG113385, BG168549, AI554245, AA225339, BG163618, AI955866, AI784252, AL514457, AI800453, AI270183, BE785868, BE045182, AI537677, AI274508, BF814541, AL134999, BE018334, BF792961, AV753074, AI564749, AV706744, AI866457, AW020693, AI611738, AI282326, BG036479, BF970768, AW411310, AI270707, AI890507, BG109270, AW880037, AI335426, AI348777, AV682525, AI923989, BG113188, AI866131, AW302965, AA480074, AW673679, AI812015, AI439717, AI569583, AW169653, BG105895, AI934147, AI613436, AW022682, BF872670, AI801544, AI500077, AI610114, AW071417, AI862144, AV657079, AI699857, AW983829, BG030364, BF033296, AW268067, AI621209, AI800433, AL036638, BE879967, AW050850, AI471361, BG029829, AI312428, AV727776, AI869367, BE964614, AW148320, AI569579, AW075413, BE885241, AI308032, AW196105, AL121328, AI344785, F27788, AW073994, AI889953, AI886124, BF793370, AI567612, AI624120, BE905335, BF529088, BE886728, AV734185, AI950664, BF529870, AW020095, AV757362, AI251205, BF85081, AW149227, AI590134, AI497733, AI500659, AI619748, AI824576, BC000559.1, AF070598.1, AK026067.1, AF308472.1, AJ2892233.2, AF076775.1, AB039371.1, AB039368.1, AB039369.1, AB063070.1, AB039367.1, AL049314.1, AL442082.1, BC008893.1, AK000323.1, BC004951.1, AK000432.1, AL136892.1, AL080127.1, AK026542.1, BC001967.1, AK024588.1, AK026630.1, AB060825.1, AB055303.1, AB060887.1, AL133016.1, AK024538.1, AL050172.1, AL12050.1, BC008899.1, AK026959.1, AL136844.1, AL133557.1, AL110221.1, AL117583.1, AK025798.1, AK026927.1, AF061943.1, AL512754.1, AL136787.1, AL512718.1, AL137550.1, BC006164.1, AB063046.1, AK025484.1, AB056768.1, AL133565.1, AB049892.1, AK027113.1, AF090943.1, AK026353.1, AL137271.1, AB060908.1, AK027204.1, AL133560.1, AL122093.1,
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HLHAP05	181	638476	1 - 1828	15 - 1842	<p>U42766.1, AL122110.1, BC007326.1, AK026528.1, AF218014.1, AK000137.1, AK027200.1, BC007199.1, AK027868.1, AF219137.1, AL512750.1, AB052191.1, Y16645.1, AB050510.1, Z82022.1, AL117460.1, AL049452.1, BC004370.1, AK026744.1, BC001045.1, AF207829.1, BC008488.1, AF056191.1, AK000618.1, AK026629.1, AL137459.1, AK000647.1, AK025084.1, AK025209.1, AB056420.1, AB060916.1, AL136915.1, AL050277.1, AL512689.1, AL117457.1, AL136845.1, AL133606.1, AL137521.1, AL390154.1, AK026532.1, AL050108.1, AL110225.1, AK024524.1, AL110196.1, AJ242859.1, AL162006.1, AL359601.1, AF090900.1, BC008387.1, U80742.1, AL117394.1, AK026534.1, AL050138.1, AL136749.1, AF353396.1, AB055366.1, BC002733.1, BC007021.1, AL136768.1, AF125948.1, AF090896.1, AL080124.1, AK026647.1, BC003683.1, AK026480.1, AK026583.1, AL137560.1, AL359596.1, AB056421.1, AK026855.1, BC004958.1, AL122098.1, BC007198.1, AL117435.1, X72889.1, AB051158.1, AL136786.1, BC008280.1, AK000486.1, AL136789.1, BC003548.1, AF260566.1, AF078844.1, BC008780.1, AB048953.1, AL049430.1, BC003687.1, BC006807.1, AK025414.1, AL512746.1, AB063079.1, AL133014.1, BC008365.1, BC006412.1, AJ012755.1, BC006195.1, AB055315.1, BC008070.1, AK026526.1, AL162008.1, AK026642.1, AK027116.1, AB060863.1, AB055368.1, AK026462.1, AL359615.1, AL137463.1, AK026504.1, AL049300.1, AL137557.1, AB048964.1, AK025391.1, AL050024.1, AB047801.1, AF090903.1, AL050149.1, AL157431.1, AL080137.1, AL133113.1, AF271350.1, AL162002.1, AF230496.1, AB060826.1, AF162270.1, AL050116.1, AK025958.1, AL049464.1, AK025092.1, AB060852.1, AF111847.1, AL353940.1, AF146568.1, AL136586.1, AL050393.1, S61953.1, AB019565.1, AL080060.1, BC008382.1, AF097996.1, BC008417.1, AL133640.1, AK026651.1, AF217987.1, AK025254.1, AK026593.1, AL359620.1, BC005890.1, AK025906.1, AK025339.1, AB056427.1, AK026164.1, AL512733.1, AB048954.1, AK027164.1, AK000391.1, AB060214.1, AL110280.1, AF026816.2, X82434.1, AL122049.1, AL133093.1, BC002839.1, AL512684.1, AB047904.1, BC006440.1, AL359583.1, AL117585.1, AK026600.1, AK025383.1, AF125949.1, AL050146.1, BC004556.1, AL136799.1, AF061573.2, AL122121.1, AL136805.1, AF091084.1, AL049466.1, AL136928.1, AL162083.1, AF090934.1, AK027096.1, AK026086.1, AK025967.1, AK026597.1, BC002643.1.</p> <p>AW963016, AW979070, AA554869, AA828610, C14699, AA359181, C15123, AI380617, AW303196, AW301350, AW023111, AW974639, AI798545, AA359849, AV711430, BE252421, BG222813, BF974349, BG236628, BF804385, AI246796, BF918155, AV711465, BE180633, AW327868, BE301584, BF879045, BF965775, AA574442, AI253987, AW410784, C15415, BF761328, AI357823, BE676019, AV738383, AW270258, AW167330, AA610509, AI188390, BG029224, AV759972, AL117335.26, AL109976.23, AC009087.4, AL136081.10, AL021579.1, AF064861.1, AC079684.16, AL163279.2, AL136000.4, AC006014.2, AC005067.2, AL049839.3, AL035587.5, AC008569.6, AL513131.1, U89335.1, AC008771.4, AC005052.2, AC073136.6, AC003104.1, AL117336.22, AL031730.1, AC022515.5, AC009570.13, AC010328.4, AL049776.3, AL135749.3, Z85986.1, AC002369.1, AC007201.1, L44140.1, AL133545.10, AC011450.4, AC013726.7, AL034405.16, Z84469.1,</p>
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					AL139099.2, AL136305.14, AC020908.6, AC005291.1, AC008622.5, AC004647.1, AL158040.13, AC018636.4, AC008625.5, AC005488.2, AL050307.13, AC083863.2, AC007969.3, AC016602.6, AC002316.1, AC010126.3, AL359235.3, AC006480.3, AC004819.1, AP001748.1, AC006157.2, AL121969.12, AC003093.1, AC011236.8, AC009362.8, AC018648.5, AP000924.6, AC005261.1, AC004520.1, AP001705.1, AC008280.4, U47924.1, AC018695.6, AC004000.1, AL049646.19, AC002425.1, AC011005.7, AL359711.18, Z85987.13, AL132659.10, AC004953.1, AC006329.5, AC016594.6, AC011465.4, AC073321.4, AP000240.1, AC007308.13, U95742.1, Z97056.1, AL049761.11, AL391241.21, AP002852.3, AC025679.4, AP000424.3, AP000096.1, AL031311.1, AL034420.16, AC005098.2, AC009086.5, AC026464.6, AC002350.1, U91318.1, AC007664.12, AL020995.14, AL354813.31, AC083866.2, AC004797.1, AC004791.1, AC002504.1, AC005077.5, AC022211.5, AC009068.10, AC022405.5, AC005932.1, AC025457.5, AF318296.1, AC005077.5, AL161670.4, AC004815.2, AC027129.5, AC012170.6, AC011894.3, AL121586.31, AF287262.1, AC006530.4, AC022415.5, AL162293.22, AL117352.12, AL121891.22, AC007216.2, AL034451.26, AC009244.24, Z97985.16, AC006006.2, AC011247.10, AL132713.11, AL133246.2, AL135818.3, AJ400877.1, AC004098.1, AC004922.2, AP001670.1, AC010618.7, AC009137.6, AC011551.3, AC002470.17, AC011737.10, AL353668.18, AC079361.17, AC007421.12, AC005520.2, AC005082.3, AC005099.1, AL035659.22, AL445928.8, AL136300.22, AF243527.1, AC005940.3, AC019205.4, AC024561.4, AC004655.1, AC005562.1, AC004656.1, AC072061.8, AC016995.4, AC015853.8, AC004222.1, AC005531.1, AL354816.5, AL157372.18, AC006483.3, AF168787.1, AC012151.13, AL109935.39, AC006211.1, AC004128.1, AL035088.1, AC005952.1, AC011453.4, AC004648.1, AL133228.18, AC010913.9, AC007371.16, AC007030.3, AL121972.17, Z95152.1, AC000134.14, AC034198.6, AC007690.11, AL117382.28, AP001630.1, AL162430.15, AC006452.4, AL589723.7, AL009181.1, AL121992.24, AL132768.15, AL445490.6, AC008072.3, AC007220.4, AL132640.4, AP000210.1, AP000132.1, AC068724.7, AC004702.1, AL359792.3, AC004216.1, AC006509.15, AL049636.22, AC011816.17, AC008397.7, AC020916.7, AC010326.6, AL162464.5, AC005378.2, AC069262.24, AL031905.7, AF288742. 1.
HLHCS23	182	560663	1 - 1413	15 - 1427	AL512506.8.
HLIBO72	183	883431	1 - 1754	15 - 1768	AW364017, AV726728, BF035681, AA169752, AW364018, AW473802, AI983855, AI925556, AW069100, BE677197, BF382750, BF590308, AW970436, AW069481, AI341115, AA622018, AI167674, AI335907, AI377478, BE677196, AI352114, AA373289, AA826793, AA443946, AA431454, AA768408, AI274003, BF727025, AA630606, AW364013, AA132208, AW574586, AA621404, N54466, AA593091, BG166649, BF883778, BF882969, AA127838, AI695553, BF371992, BF793125, AA807643, BF965857, BF739818, BE074542, H02646, BE395704, BG249993, AV764523, BG249406, BF832747, AW964084, AW673241, AW969921, AW276827, AW969698, AW969694, BF698559, BF337291, BE350475, AI570261, AV759382, AW972871, AW731867, AI289067, AV764398, F36273, AI061334, AL046409, AI679782, AI619997, AI177061, AW088202, AW975425, AW419262, AI085719, W79504, AW472872, AW029038, AI653636, AI471481, BE047069, AI688846, AI053672, AW301350, AI904894,



					U57008.1, AC006476.3, AF095855.1, X54176.1, AL022476.2, AC005531.1, AC083863.2, AL031123.14, U18398.1, AC016772.8, U62317.2, X75335.1, AL110115.38, AC010000.5, AC011472.7, AC007363.3, AC008079.23, AL035587.5, AC006433.18, U18395.1, AL133370.4, AC016939.8, AC023114.5, AC074338.1, AC005324.1, AC018751.30, AC010422.7, AC006213.1, AC011455.6, AL133232.15, AC010319.7, AP001172.1, AC022392.4, AF015170.1, AC013604.9, AC010677.4, AL031276.1, AL121845.20, AP000555.1, AL035668.15, AP000161.1, AC008033.8, AC009122.8, AC020915.6, U67827.1, AL135924.11, AF176815.1, AC004773.1, AC009161.12, AL121944.14, X54175.1, X54181.1, U57009.1, AD000092.1, AC083871.2, AC005497.9, AL139039.17, AC004224.1, N76577, AA535949, D20477.
HLICE88	184	840321	1 - 826	15 - 840	AL532043, AL201573, AL531300, AL531634, AI989422, AL531496, AL531955, AI984220, AL531518, AI954841, AL531321, AF074698, AW339929, AL531471, AV651041, AA779747, AV651093, AV699907, AV650840, W72217, AI064748, AV654559, AV682392, AW269523, AV651109, AL531705, AV694886, AL531173, AL531868, AV654713, AV682656, AI174843, AV718993, AV690790, AV647604, AW665993, AI065032, AV700518, AI568934, AA936960, AV718549, AI092886, AI189826, AI187086, AV718380, AI911879, BE825390, BF126685, AV719205, AV650157, AI313492, AI917303, AV699400, T64315, AV682007, AV683969, AI186901, AW950039, AV662312, AA906009, AV658467, AI283155, AI580756, AI207724, AV700035, AL532119, AV682707, AI989903, AV682339, AI825233, AV718528, AV692690, AV661899, AV687963, AV649290, AV695138, R00044, AW074348, AV662232, AV662173, W68580, W77961, AV661196, W78129, W94563, AA312959, AV719960, C20909, AV655180, AA313014, AV647336, N79517, T53800, AV697776, W92647, AI140948, AV661818, AV653519, AV682459, T69024, T64703, R85625, AV659219, AV654902, AV654163, AV656147, AA343530, T62908, AV662293, AV646927, AV660491, AV661947, T27841, D12274, AV649738, AV719990, AL531635, W78014, T50716, AA344654, AV690645, AA343475, AV655633, AV694901, AV661905, AV653213, AV656799, T64666, BE250740, AV646035, BF884848, H89646, BF907679, AV684695, AV697617, T74885, AI266531, AV693375, BF700475, AV649852, AA312904, BF884387, T72273, AA360373, AA345098, T46873, AV649783, T40932, T64651, BF223298, BE971381, T73291, AA345478, T68149, AA344540, AV652797, T69397, BE786550, AA127901, T70574, H49804, T67493, AA313214, AV659816, W79416, AV648902, AA345122, AI808530, AV655148, BF059586, AV718825, T52365, T23996, T74611, AA313496, T69582, T68003, AV648713, T64115, AA345475, BF695457, AV682967, R09360, T69277, AA345347, AV662313, AA328409, AA780302, AA344998, T50690, T68193, T58776, AA313189, T50709, T74553, AA345561, AA345467, AV653080, T94279, BE693289, T69653, AI065018, BF126654, BE693283, T69258, T41064, AV688374, AV655766, BF814637, AA313124, AA331360, AA345116, AA360365, T73437, T67507, AA313165, AA345423, AV684262, AA382681, AA344388, T82069, AA345257, AV661807, AA313286, AA345507, T41037, AA313498, BF696362, AV692145, AA345440, T55851, AA345466, AA337510, AV681621, T83205, T55856, T72290, AW805833, AV655197, BE971173, AV659822, T58721, AL531497, AA344638, AA331364, AV656556, AL532136, BC007044.1, AF350254.1, M10014.1, K02569.1,



HLICO10	185	658740	1 - 889	15 - 903	<p>X14174.1, X51473.1, X00086.1, T58742, T58809, T61213, T61761, T41027, T72141, T73555, T90758, R09244, R01860, R06531, H89500, W68581.</p> <p>AL529328, BG112680, BG167989, AA085584, BE262006, AL529327, BG260293, BG249757, N22761, N26007, BF196867, AA280102, BF514824, BE891591, AA767358, BF939520, AI279818, BE739831, AL120055, BF963163, AI925373, AA131093, AW085504, AW162139, AL535957, AW474103, AA420445, N28638, BF956276, BF593788, AI744571, AA742528, AI435277, AI829565, AW160528, AI139035, AI493778, AI245988, AW069411, AW516063, BE910223, W15257, AI151012, BG054902, AI301040, AA722819, W76144, AI889181, AI204062, AI149031, AI347045, AI499416, AI673290, AI355297, AI129621, AA543069, AI751089, AA994980, AI362786, AI318410, AW149494, AI125569, AI079416, AW404941, AA770442, AA648851, AA629008, BE328665, AI247813, AA160319, BE440081, N22512, AA443882, AA778886, AI660433, BE931050, AA649181, AI745515, N62872, AA493744, BG056104, AI623946, AI285125, AI215715, BE222502, BE676429, AA504825, AI581011, AA620693, AI078347, D52655, AW303949, AA687345, AI393677, BF940962, BG171314, AA749011, AV726238, AA417346, AW170474, Z33441, AI183796, AA808431, BF108904, AW874002, R68900, N36639, BF081563, BF874460, AA460912, AI801687, AA844317, AI033533, AA862981, AA987560, BF106233, AI123102, AI630222, AA132268, H97951, F09973, AA700603, BF095564, AA987560, AA310754, AI204674, AA917323, AA055734, AW303928, AA887061, AA280035, AA349683, H05230, AA09981, BF090414, AA364664, AI291170, AI468099, R68798, BF346271, N48905, D79245, AA417342, AA411885, AA722919, AA420446, AA494845, AA399258, T72608, AI432975, AA362128, AW058332, W92665, R83367, AA494154, W39243, AA846034, H95607, T34609, AA215954, H23218, AW050688, H24734, AW514476, AA923801, H66432, W72918, AI079606, R98151, H66431, AA244417, BE698764, AA804423, AA622872, T31355, AA702502, R43440, AA707618, H24733, R87113, T27438, AA558993, T59606, AA935666, D82741, D82748, R96845, AI370727, BF593775, AV701728, AA857267, T93033, AL535958, AA834104, AI758519, R38967, BF037544, BE931079, AA026767, R99802, AA781666, R83802, BE855553, BF086577, AV749936, BF130854, AA837976, BE084146, BF369140, BE719714, BF959504, AW008916, AA244402, BF749521, AA411884, BF355502, AV705377, N49651, BF036781, AA307437, BF959508, AA132267, BF355476, AF131742.1, AL031685.18, AF090934. 1.</p> <p>BE567776, AV700524, BF196916, AI672424, AW444907, AW675742, N22350, BF130300, AI493074, AI128167, AA813377, AA581365, AA806553, AA251305, AI077946, BE939272, AW302629, AA708974, AA280790, AA868066, W57951, AA732853, N48892, AA602429, AA281438, AA451619, AI280014, N75214, AA281368, AI434509, AI287995, AI807299, AI907315, BF223560, AW236045, AW630367, AW935099, AA280750, C00449, AI494205, AI832681, AA419487, AI907335, AI907325, AI907322, AI907316, H43026, AI907338, AA251633, AI907336, AI907339, AI907421, AI907320, AA450216, AI907328, BF885933, AI907317, AI907330, AW627341, AA419544, AI907332, BE172973, AW820280, AI907326, AI907323, AI864966, W58084, AW820475, BE163982, AI907333, AI907318, AI907331, AI907337, AI907334, AI907327, AI907319, AC008482. 5.</p>
HLJBS28	186	658742	1 - 962	15 - 976	

HLMBW89	187	701996	1 - 608	15 - 622	AI802901, AL525060, BF339743, AI889514, BE399479, AW026514, AL522334, AA464368, AI889524, AA632076, AL530537, AW962261, AW272715, AA081418, AA417376, AI689262, AA464386, AL525059, AI281824, N99927, AA680361, AW264836, BG114962, AW022729, AW022859, AW968234, AW022849, AW020287, AA456473, AA629813, AA594133, BE792441, T06003, AW848654, BG112394, BE041335, AI961941, AW269290, AW474379, AA700910, AI538989, AI075918, AW250197, AA319841, AW935332, AW612947, N93194, AI421046, H81794, BF438369, AI094322, BE048443, AI935462, BE870520, AA352936, AA675922, BG178467, AI263242, AA478734, AA464702, AA493371, AI688358, AI767408, AI688521, BE677149, BE168899, AA024843, AI336330, F09704, AA527428, AL514699, AI919046, AW968236, AI273221, BE905535, AI269409, AI904291, AL529150, T66281, BF914185, R94431, BF912784, BE746553, BE866080, R52791, BE735854, AL530538, AL528593, R95684, AI247775, W38780, N57835, BG180414, AW268970, N42879, BF314717, AI816825, AI766194, AI611368, T98208, AA256650, BE048769, AL529754, BG178286, AW302197, AW191640, AA464275, AW769956, AA173157, AA364692, AI566133, AW589478, AI278645, AI184566, AA416981, AA380399, BF836166, AI093813, AI160031, AC000378.1, AB019038.1, AK001523.1, BC007983.1, BC004402.1, AK026807.1, Z66003.1, Z66002. 1.
HLMGP50	188	647603	1 - 1049	15 - 1063	AA757562, R84390, BE206718, AA076888, AA262606, BE185269, F03281, F02669, AC005922.1, AP000036.1, AC026955.10, AC004139.1, AP001713.1, AL121932.19, AC025679.4, AC087859.2, AL031311.1, AP001699.1, AL360219.18, AL132656.14, AL365226.9, AP000099.1, AL445071.14, AC005378.2, AC018663.3, AC005144.1, AP000263.1, AC008250.23, AL050309.4, AL390791.15, AL353764.9, AC004020.1, AC004805.1, AC007749.3, AL391379.12, AC006337.4, AC006947.2, AL359816.16, AL137248.21, AC073864.28, AL356137.10, AL023279.1, AC006305.2, AL583848.9, AC004905.1, AL157911.4, AC010585.6, AL160157.17, AP002089.2, AC010601.5, AC026370.24, AC005274.1, AL022152.1, AC022108.4, AC004554.1, AC008074.3, Z82198.2, AC006231.18, AL356739. 11.
HLMJB64	189	658699	1 - 790	15 - 804	AA009680, AA009679, AW001223, AA010946, AW029359, BF957577, AI905884, AA777011, AL122043.1, AL034550. 31.
HLQAS12	190	886180	1 - 2436	15 - 2450	AI928113, BF982378, AI357634, AI765282, AI453115, BG231939, AU157262, AV708295, AV727507, AW082681, BE501554, AI188985, AI095135, AU156104, AV726829, AU135631, N51624, AW440717, AU156188, AI244310, BF934257, AU137679, AU135523, AU138854, AI300045, BF917907, AA044216, BF914890, AA938683, AI868392, N75085, R78358, AA044087, R31345, H68138, R78357, AI419044, R62557, H67054, BF858325, AA620341, R26153, AI243883, R23598, R31604, AW969916, AA528481, BF110458, BE174919, R07930, AA682386, AA114093, N53919, AW298577, BF895809, AW796811, AB017444.1, AF079167.1, AB010710.1, AF035776.1, AU131757.1, AF079166.1, AB017441.1, AF079165.1, AB017440. 1.
HLQCL64	191	864966	1 - 2371	15 - 2385	AA773632, AI719611, AI831841, AA484843, BG236266, AW958537, AW613564, BE042553, AI360746, AA621132, BG236374, AI693953, AV656458, AW014829, AW272370, AA381158, AV686654, AW129914, AV686826, AV658659, AA381159, AV653670, AA381471, AA344791,

HLWAV47	192	897769	1 - 2048	15 - 2062	<p>AW300933, AB008775.1, AF016495.1.</p> <p>AUI134635, BF970923, AW299310, AW172863, AI480424, AUI55551, AW771898, AI913412, N22470, AI564411, R96113, AA018040, AW953032, H03718, R63626, H02827, H04026, R63612, C03429, R63627, H03345, AA343143, AA001617, R63613, R96075, AI820094, AI742556, BE926861, AI289791, AA814782, AA504514, AI499986, BF107423, AI491710, AI696340, AI609478, AI648699, AI334445, AW301409, AW583111, AW084896, AI521799, BE047852, AW682326, BE883591, AW834302, AW029457, AI471429, AL040011, BF726255, AI915049, AA808175, AW087879, BE439844, BF337541, BE886790, AW087217, AL036150, AW020381, BE904911, AI539028, AI886355, AI955945, AI476694, R65859, AI439664, AV734654, BF925370, AI926593, AW151451, BF343238, AI688854, AI539260, AW089275, BF338027, AI289436, AI433611, AI446457, AW151132, AW088899, AW021717, AI432040, AW189563, AI803935, R80916, AI859644, AW022636, AI538885, BE790023, BG105099, AV710208, AI680418, AI587567, AW088605, BE393784, AA488166, AI923989, AV757158, AW088560, AI689096, AA745069, AA587120, AW087886, AI305157, AI537516, AW082623, AI440238, AA928539, BF812963, AI623535, AI925510, BF811802, AI560227, BF686161, BF337602, AA853033, BG026746, AI474646, AV706624, AI680504, BF971669, AI683979, BE964302, AI225000, R10067, AI401697, AI623396, AI367203, BG113299, BF793187, BE621256, AW118448, AI472487, AI249389, AI560545, AA731711, AI280584, AW959827, BE906419, AI658566, AI571000, AL513961, AW301861, AW263569, AI371872, AI538637, AW409775, AW051088, AW020397, AW168485, BE542554, AI339746, AI696434, BE541445, AI499104, AI500523, AW088183, AI445620, AI554516, AW059568, BG110517, AI874261, AI699823, AI364220, AI309306, BE875750, AI422688, AI624021, AI612723, AW166742, BE962830, BE439708, AW168200, AV713079, AI498288, BF699580, AW025279, AI355779, BE875959, AI590043, BF679724, BF814215, AI524654, AI499325, AV728997, BE540209, AA904121, AI801325, AI279925, AI419650, AI096481, AA767924, AI926182, AW169598, BF814357, AA804747, AI696714, AI873998, AW410868, AI699020, AW087933, AI628850, BF213155, BG027010, BF924855, N49165, AI418234, AI669640, AI096771, BF840081, AI569440, AW151850, AW104141, AI473536, AI469516, AI242248, AI224373, BE965355, AI301046, AI608676, AI355147, AW198133, BF872365, BF345028, AI267379, H89138, BG111199, AI475377, BG026354, BG178423, AI241741, AA765198, AW055252, BG252799, AI538764, AV681638, AV659322, BG029709, AL048323, BE884130, AI590755, AI598132, AB020639.1, AK001811.1, AF058291.1, AL445650.9, AL035587.5, AF217987.1, AL355834.4, X99226.1, BC007034.1, AL136565.1, AK026630.1, AL136784.1, BC002495.1, AL161802.15, AK025632.1, AL121828.17, AF260566.1, BC000051.1, AL389935.1, BC004923.1, AK026642.1, BC003410.1, AC009233.3, AB060876.1, AB060869.1, AC066585.5, AC004837.1, AL360294.11, AL442643.2, AL157433.1, AC069247.5, AL136644.1, AL137267.1, BC004960.1, AF217989.1, AK024747.1, AK025258.1, AL137627.1, AL035407.15, BC007304.1, U38847.1, AF218033.1, AL512689.1, AL353940.1, AF146568.1, AL122104.1, AK024974.1, AK000502.1, M64936.1, Y13350.1, AK024992.1, AP001699.1, AF038847.1, AB060893.1, AL137711.1, AF274348.1, AF274347.1, BC008893.1, Y00093.1, AK026600.1, AL354828.12,</p>
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					<p>AL136984.20, AC026888.6, AB060877.1, AK000247.1, AL161804.4, AK026506.1, BC006807.1, AL355143.17, AF225424.1, AL137258.1, BC002409.1, AK025375.1, AF110640.1, BC006525.1, S76508.1, BC001369.1, M19658.1, AL050024.1, BC006103.1, AC008897.7, AK025407.1, AB055368.1, AL356015.3, AY026527.1, AK025772.1, BC008649.1, AK026057.1, BC000253.1, AL512754.1, BC003101.1, AK025958.1, AB049880.1, AL359601.1, AL136765.1, AK000618.1, BC008781.1, BC002809.1, BC008718.1, AL096727.1, AF013249.1, AL117416.1, AK025092.1, AB048975.1, AK027200.1, AB056372.1, AL117457.1, AK027188.1, AK000391.1, AL137480.1, AK026556.1, X61970.1, BC002958.1, AF078844.1, AB047609.1, AL136928.1, AK026590.1, BC001763.1, AL356473.11, X66975.1, AC006357.5, AK000718.1, AC013407.7, X00474.1, AL110222.1, AF217982.1, AB063009.1, AB050534.1, AK026762.1, BC007767.1, AB050431.1, BC001217.1, AK025484.1, AL136864.1, AL050393.1, BC002574.1, AF126372.1, AL355795.13, AF229831.1, S61953.1, AB048910.1, BC002695.1, BC004530.1, BC001967.1, AF177336.1, AB055352.1, AB046642.1, AL080139.1, AL122100.1, AL133075.1, AL096744.1, BC001790.1, AK000414.1, AL137548.1, AF201468.1, AK027868.1, AF112208.1, BC002733.1, BC003637.1, AF007142.1, AL137429.1, AJ406939.1, AC009953.4, AL354776.15, AK027129.1, BC003614.1, BC004925.1, AB056427.1, AK026626.1, BC003056.1, AL135796.6, BC001349.1, BC003682.1, AL133047.1, BC001969.1, AL136882.1, AP001605.1, BC000632.1, AL117644.1, AL136615.1, AL110196.1, BC003108.1, BC004951.1, AL050172.1, AL512733.1, BC006345.1, AL137574.1, BC007522.1, AK026570.1, AK026615.1, U77594.1, BC000007.1, AF111112.1, U96074.1, AL121722.9, AF074604.1, BC008364.1, BC002700.1, BC002390.1, AK025209.1, AB048921.1, AF339775.1, BC004244.1, AF002672.1, AL136749.1, AL133665.1, AL353092.6, AL133560.1, BC003687.1, AB048953.1, BC002519.1, BC001059.1, AF202636.1, AK025259.1, AK000421.1, BC007898.1, AL133344.28, AL137656.1, BC004324.1, AL122118.1, AF369701.1, AL157479.1, AF230496.1, AK026462.1, AK026356.1.</p>
HLWBB73	193	740757	1 - 1702	15 - 1716	<p>BE748913, BG254872, BE748391, BF672324, BF966703, BF671902, BE788316, AA203123, BF212040, AA218859, AW377115, AA203627, AW377116, AW466993, AA453001, BG110856, AI814390, AA442115, AW500165, AW028118, BE549724, AI338468, AA776470, AW994505, AI889182, AA587997, AA477530, W88637, W90004, H24135, AW118873, AA777649, AI803064, BF109783, BE677049, AW504429, AW440623, H18779, AA442065, AA452862, AW851386, AA426118, AW302201, AI129606, BF591306, AA969289, AI017372, AA846715, AI261586, AI590199, AI038086, BF477702, AA705970, H08497, AI033228, AA442204, AI242610, W88555, H16440, AW302548, C75525, AI33551, AA745763, AI241602, AA442204, AI242610, W88555, H16440, AW302548, C75525, AA133175, C06435, R42254, AA463878, D82526, D82474, AW058542, T84064, R42953, W900048, AW269034, AW081189, AA465445, AA349461, R18274, T86365, AI475416, T86302, Z25120, H08650, T74461, H56028, AA648167, AW611503, AA370198, BF091449, N67780, AA370652, H08651, T77949, T86401, N94739, BF001494, AA442169, F10246, AA325886, BF437154, D20156, H60364, F13771, R18054, W03406, AW377119, AA370197, AV741440, AV748910, T86104, AA328402, AI370219, H08774, BF091351, AA058603, H59092, AA703118, AV660168, BE244733, BF091441, F13474,</p>

					<p>TI6351, TI0772, AA385806, RI5577, AI948928, CI5482, W02814, AA134844, AI718608, BG055503, AW971745, AW884363, BG179403, AW877209, AL119457, AW392670, AL119324, AW804686, AW604723, AL119319, AW861944, BE695785, AW858526, AL119484, AW858525, AL119399, U46351, Z99396, AL119363, AL119391, U46350, U46347, BE705903, AL119497, BE705906, AW577135, AW372827, AW384394, AW861889, AW858455, AW363220, AL119355, AL134902, U46349, AL119418, U46341, AL037205, AL119443, AL119401, AL119522, BF868684, AL119439, AL119444, AL119496, AL119483, AL119341, BF868697, AW604726, BF868687, AL134525, AL134536, BE705905, AL119396, U46346, AL134531, AL119335, AI142131, AL134518, AL042544, AL134538, BE705904, AL043019, AI142132, AW861954, U46345, AL043029, AL042542, AL039851, AL042614, AL042965, AL042450, AL042984, AL042975, AL043003, AL119464, AL117352.12, AF334711.1, AF246631.1, AJ227859.1, AF244812.1, AB026436. 1.</p>
HLWCN37	194	827294	1 - 774	15 - 788	<p>U51712, AW469993, AI683579, BF593972, AA156672, AA813352, AI656238, AA922773, BG054836, BF437484, AW969027, BG232024, AW593806, AA152031, AJ278586, BE170409, AI141452, BE169576, AI190863, BF195209, AA215646, BF432354, AV762498, AI394467, AW795397, N55048, N34760, AI161277, BE774626, AV722766, BE169455, BE774627, BE774616, AI634745, BE169747, BE169704, BE169842, AI363039, BE169794, AW809164, BF526036, AW103704, BE169524, BE169419, AA215833, AW795399, AI150452, AW809204, AW809241, BE169413, BE169788, AW809275, AA781840, AI201538, BE169790, AA251832, BE169521, AW809252, BE169640, AW809200, AW191924, AW809276, AW809277, AI193438, BE774631, AI302248, AA938737, AA831840, AI088468, AW809230, AW809278, AW809218, AI242686, BE169705, AW809211, N50718, AA916391, AA152105, T70605, AI865680, BE169744, H48216, BE169573, AI520796, AA412667, AI285160, AA405274, AA416721, N46883, BE169839, N49575, AV705027, BE931668, BG178168, AA936977, BE169743, AI094355, AA988894, AW795323, AA857217, BE169840, BF337308, BE169642, R60055, BE169574, AI784608, AV759943, BF989643, AV761542, AI346652, BE328856, BF575818, R41659, AW900685, AA987752, BE169575, AA279656, BE169745, R82244, AA368868, F09500, T94683, AI694738, AW612768, W74715, AA991473, AA156844, AA251947, R40299, BE169517, AW959220, BF718508, AA504398, AA779408, BF718322, R33470, BF718460, AW075143, AI345902, T96422, AI377613, AI611930, AW955211, D78826, F04641, T70871, T96505, BE465046, R51264, AA548648, BF718332, AI312402, BE169838, AA828485, R43610, H40897, BE169418, AV738470, Z38388, AI311285, AA470387, BE937290, D30839, BF974238, AW405055, BF215689, BE169416, AA504137, AA588028, BF718466, BE169843, AI311341, AI308514, AV764537, AA732515, AI434528, BF985829, AI307539, BF985928, BE773662, H48308, AB059408.1, AB059410.1, AB059409.1, AB019573. 1.</p>
HLYEUS9	195	582084	1 - 1132	15 - 1146	BF968135.
HLYGB19	196	838083	1 - 2953	15 - 2967	<p>BF718797, AL530914, AU122015, AI761694, BF038798, BF974159, AA449050, BF975260, BE735899, AI188455, AU134674, AW968498, AW960634, AV684895, AW131552, BF203871, AV684924, AV683742, BF244139, BF033060, AA776474, AW401753, AI479963, AW770118, AW009452,</p>

					AI097214, BE762877, AI335977, AI762159, AU147719, BF829908, AW081547, N31953, N54405, AW968675, AW027335, AI021890, AI129620, AI138490, BF829004, AA844148, BF828312, AV698851, AW574571, AW239446, AI129265, AA906378, AI034375, BE939298, AA761562, AA116132, AI309628, BF082209, AW451927, BF829026, AW408327, AI051106, AA630084, BF569686, AA036712, W45195, AI032728, AI339926, AI074132, AI471599, W22022, BF082207, BE939304, AI189152, AV710898, AA927339, BF306015, AI809033, AA808345, AW631461, AA805537, W56021, AI369598, AW181953, AW959382, AA604051, AI301504, AI243700, AA908734, AI302040, AA116133, AA905111, T16006, AI250836, AI061222, AW166610, W79663, AA218662, AI025631, HI4227, AI244792, BF350111, H30465, BF341081, AA040473, AA815302, AI040662, R47459, R14799, H25817, AL530913, W22981, N58286, BF829355, AW468255, AA358781, T11517, AU158189, AA815303, AI244838, AA338759, H20744, AI090355, AA449764, AI446423, T33500, AW771363, AI866647, AA845385, AW473577, Z42948, T93787, T33501, AA045487, AW374532, AW771413, AI042636, BF514249, AW374660, AU155575, AA782096, H20745, AI051438, AW589392, AW513929, W81374, D52633, BF082994, T34695, BF828305, AA545751, AA034333, N86776, T31905, R02426, AA553569, BE927112, AI609652, AW074694, AA333215, AI911074, N56158, AA854272, AA595479, AA249082, R02324, AI919036, AI369954, AW627681, N90614, AI860902, AA057344, AI597712, AA853614, AA366427, W19151, AA334888, AA094393, AL079979, D60062, N88499, AA094034, AW087898, R58414, AA282579, AA095396, AI691125, T93832, AW131456, N55949, Z39072, N88847, AA550945, AA248097, BF826420, R45852, N89101, R58270, BE708597, AA338758, AI917872, AA853613, BF376677, N56337, AW078511, AW793656, AA282656, AA480917, BF094247, BF109813, AW381449, N53121, R40110, AW381451, AI077861, AW793657, AA788640, BG222312, BF828881, AL136703.1, AK027232.1, AK023425.1, BC006088. 1.
HL YGEI6	197	651339	1 - 738	15 - 752	AW469203, BF820842, BE218294, AW196671, BF447223, AI696980, AW236972, AI027666, BF798334, BF807954, BE217850, T59291, AI267964, R44968, AW444500, AW295686, AW291949, AI928514, AI823933, AU153630, AI139764, BE005097, AI948643, BF108749, AI126466, AW242784, R49472, AU160792, AW273139, AI273589, AW589378, AI274894, BF448101, AW510475, AI302181, AI400517, BE550344, AI365030, H18516, AI206723, F09161, F09171, AI696176, AI992327, F09169, AW051573, AA847131, R86756, AU148421, AU154040, AI421825, AU159186, AI146780, AI910733, AA868280, AA722823, BE504675, AI739531, AU152829, AA868452, AI911876, BE552250, AI168680, AI954643, AI913116, AW237207, BE502531, AI142459, D80575, AW002567, BF939794, D80957, AA702863, BF591908, AA455456, AI015316, AA922953, AV645338, AA514480, AI420243, R86981, AI420270, T59250, BF508779, R60233, R51570, AI580357, W86599, AA417873, AA085431, AA227559, AA852691, H57046, BF845379, AA192359, AI580716, AA455455, AA776815, AI140464, AA075296, BE300079, R27183, AA814809, AW105331, AA024748, D81100, BE620885, BF845381, R27182, BF912382, BE904044, BE904041, BE881261, BE965135, AI631590, BE551572, AI656791, AA282050, BG055430, AA937231, AC025594.5, BC009221.1, AK022910. 1.
HL YGY91	198	658703	1 - 626	15 - 640	AW294783, BE502344, BE222441, AI082255, AI031661, AI701563, BF431032, AW340159, AI250886,

HMCFH60	199	654853	1 - 429	15 - 443	AA164268, AA113365, AW195764, AA813476, AI382168, AW044458, AI802164, AI149406, BF196258, AU155794, AA479123, AI167291, AI436306, AI224847, AI417116, AI709346, AI669258, AW772002, AA844518, AI282711, AI279738, AW195230, AW959069, BF002627, AI560087, AI286319, AI474555, AI092394, AA479124, AA243709, AI468637, AW991244, AA508073, AA243826, AI468739, T62160, AW975954, T61934, BE707630, BE169617, BF747189, BE832694, AA746981, AA328991, AK023448. 1. BG029413, AW410249, AL120205, AL527305, AI754933, AW410004, AW411240, BE207947, AI348361, BG254821, AV717836, AI282565, AW015954, AI860745, BF970512, AI279557, BG250088, AI301063, AI887607, AW675703, AI277972, AI751711, AI610303, AW168266, AI954092, AW732241, AI199700, AI310726, AA533655, AI219656, BE047165, AI828679, AI829142, AI874208, AI741030, AI445423, AW339140, AW872712, AW872550, AI310725, BE675720, AW276596, BE049270, AA526998, AI300518, AI805844, AI814591, AA832328, AI927014, AA461097, AW337251, BE393698, AI453250, AW009901, AA522451, AI970703, AI147456, AI799656, AI866733, AI092937, AA526185, AI721118, AI017038, AI613235, AI339100, AW148657, AI538694, AW008035, AW269978, AI818220, AW130721, AI369774, AW778916, AA508660, AI285115, AW118526, AA280728, AI803837, AI078009, AI249388, AW274402, AA449775, AI741564, AI983830, AI953077, AI283484, W94943, AI186921, AA573897, AI078388, AA670351, AI423558, AW273429, AA745775, BE727124, AI591031, BF732731, AA903469, H98073, BF973696, AA628743, AW270071, AA987523, N91829, AI144428, AI081865, BG057107, BE797291, BE798645, AW899935, N34882, BG057959, AA065282, BE910046, W68425, AA132945, H26397, AA130713, AI535963, AA526103, BF436402, BF924840, AW189969, AA813305, F25776, R59097, BF793976, AW071554, AA102712, AL527475, W90665, AI533663, AL523124, AI246999, AW194200, AA677814, AW150820, AA004278, AL533350, AI983597, H25535, AI282522, BF941561, BE617576, BE613255, BF689583, AL521962, BF568937, R56834, AL524248, AI299507, AA805472, H46569, AW004802, BF828652, AA580297, AI364662, AA703237, AL521083, R56835, AA628330, BF570271, BE877417, AI365012, H56058, AA229754, AA229480, AA302484, AI918967, AI553849, AA373811, BF688841, AA853526, AI560300, AW470964, AA682774, BE858486, BF914567, AA496495, AI950742, R56673, AA526614, AA496620, R96820, AI972733, AA868647, AA644220, AA447147, AA228723, BG015338, AA887190, AA229233, AI690364, T51235, AW075387, AA953331, BG112305, AA713800, AI094450, H61569, BF375945, AA449063, AI026692, AA159983, BF914242, T73441, AI720505, BF336367, F31462, AI827198, AW772776, AA614196, AI300639, F18178, R10734, BF336341, BE548560, AA858412, BF912964, AA229962, AA872093, AI015741, AI051521, AI203695, AA978132, AA988865, AA365973, BF948395, AI690503, W68523, AA229458, Z38471, AW262508, AA736839, BF690492, BE181244, AA007293, BE122672, AW182880, BF947488, AW771037, AI350873, AA557419, BG016041, AW515865, AV697048, R56672, T24559, BF183570, AA923506, AF189289.1, BC000702.1, AF176006.3, AF192559.3, AF151822.1, AK022783.1, AF090943.1, AL512733.1, BC005402.1, BC006091.1, AL359583.1, AK027129.1, AK025414.1, BC007462.1, BC001967.1, AB060832.1, BC008842.1, AK025435.1, AK025113.1, M85165.1,
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HMDAB29	200	584789	1 - 1176	15 - 1190	AV756491, AA714011, T74524, AW970571, A1284543, AA847499, H07953, BE139139, A1250552, BE676912, A1251284, A1251034, A1251203, AL042373, A1254770, BG169404, AW504485, A1223626, BE062159, A1755214, AW303098, AW500684, A1754567, A1053398, A1792575, A1754105, A1278972, AW576251, BE138594, BE138387, AW023111, BE315483, A1923052, AA449997, AW973992,



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HMEBB82	202	783077	1 - 2627	15 - 2641	AL524291, AL524729, AU118659, AU133235, AU124686, AW954541, AL524290, BG028716, AU126842, BF981431, BE440113, BE535372, BE890887, BE542290, AV707356, AA526812, AV722904, BG258320, AV727093, AU132991, AW574815, BF983457, AU134900, BE542029, AU125349, BG028338, AV719859, BE548985, BF669318, AW575156, AL524728, BG251868, AU132576, AU154083, AA805660, AA232722, BE246166, AA258087, BE081452, AW195058, AA523691, BF212023, AI961333, AU148498, AU145167, A1885542, AW016858, AU149026, BF814600, BG251123, AW407266, AW996403, AI860657, AI160776, AW188441, BF106148, AU154605, AW167114, AW103061, AI807990, AA426442, BE243014, BF664827, BF515106, AU131495, AI809623, AU146196, AI858947, AA926661, AW369769, BF105153, AV719564, W31168, AA251059, C14920, AI222446, BE077064, AI223373, AA523339, AW952518, AW369773, AA523446, AV681553, BF106381, BE301614, AA665998, AA262023, AW403080, AA788602, AA704695, AA042812, N53383, BE881460, AI559547, AA043050, BE220678, AI473738, D60300, AA548731, AI372891, AA214602, AI621304, AI038459, W37992, AA236516, AA962169, BE086651, D60285, AW268711, AI469501, AI222084, D60566, AU123583, D60953, AI220196, AA437174, W00737, AI915924, T89471, T89561, AA991577, AI953306, AI581162, AV756453, BF807499, W31173, H96053, BF845887, R86093, AA223316, AI445607, AI681541, BE247070, AW983792, AA809710, AW079193, AA297740, AW408732, AI766848, AW983787, AA713614, BF802863, F05557, AA343951, AA374508, N87773, AA533379, H96415, BE242396, AA094477, T82841, AA826687, BF982233, T90015, AA332523, AW403755, AW983796, F01825, AI863816, BE539235, AU149620, BE018132, BE081844, BF854670, BE246622, BG119708, BF854567, AW361136, AI540665, AA248405, AI699734, BF326144, AA095826, AW362131, BF351377, BE221592, BE151124, T25880, AI908696, AA090187, AW983748, AV660408, D28500.1, AK022665.1, AK001726.1, AK001188.1, AL445435. 11.
HMEDE24	203	837027	1 - 2822	15 - 2836	BE799690, BF971352, AL522117, BE741614, BE733821, BE253979, BE745589, BE747602, BE275209, BE740081, BE797620, BG176608, BE741557, BE745137, BE560375, BE746312, BE732858, BG025369, BG178395, BF791999, BG254540, BE791922, BG255293, BE397859, BE563260, BF568255, BE736997, BE869657, BE733788, BG179867, BE744696, BF568603, BG105384, BG164812, BE735863, BE877940, BE513940, BE730519, BG028893, BE545980, BG253222, BE902894, BG181129, BE383086, BF688245,

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HMELM75	204	587307	1 - 1593	15 - 1607	AL522460, AL523068, BF981082, BE898798, BG025506, BE547571, BE881841, BG169846, BF691263, BE546875, AA134589, BE894564, BE301261, BE886590, AU146947, BE901657, BF978116, BE293822,

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HMIK10	205	562774	1 - 1050	15 - 1064	
HMIBD93	206	634227	1 - 1309	15 - 1323	<p>AL045780, AW590225, AW970178, A1376010, A1401550, BF940066, AW072377, A1362753, AW005335, AA524093, AW575918, AW592039, A1097125, AA514373, A1424874, AA490412, R55849, R89670, AA502607, A1361469, W60204, R45456, AA906578, BF940638, H17344, W35351, AA757050, D52329, AA309188, AA490314, AA479853, R45361, A1929199, AA456776, AA394201, AA806240, R55770, W32915, A1380329, Z38945, A1003744, AA411018, R52109, A1471415, AA863370, AW953330, AW866322, BF921092, AL048656, BF038804, AW238730, BF904194, BG180996, AW075305, N49165, BG117375, BF764538, BE966011, BF343568, BE536058, BG104775, BG104699, A1684013, BF344691, BG121999, BF822127, BE966787, A1759922, BF969316, BF904258, BE393551, A1498067, BE965121, BF753053, AL039086, BE895765, BE886728, AV721967, A1923989, BE254907, AW004896, A1648699, A1872914, A1312428, BF798503, BE895585, A1636619, A1620056, AW059828, BF812459, AW162189, BF835240, BE875243, AW411235, BF885000, AL138406, A1887775, AW071417, A1961589, A1307557, A1611728, BE964876, BE047833, BE966699, A1704051, A1950892, A1620639, AW827289, BF339322, A1917963, A1810589, A1345677, BF792928, A1824375, A1537677, AW410972, AL040277, AW084056, AW834302, AL040241, A153885, AW151136, A1270055, A1570966, AL040694, A1446373, A1916419, BF856052, A1473451, BG110517, BF854113, AW149876, BF204484, AA420758, AL036652, A1571511, AW411043, BG151388, A1288285, AW409775, BE965724, A1002285, BE891101, AW410969, BE907440, A1866770, AL043052, AW827115, AA572758, BE543089, AL119836, A1955906, BF753013, A1889376, BE892572, A1468872, AW409931, A1340519, BF960601, BG029053, AW858254, A1307734, BF672397, A1521103, AL036780, BF818009, BF817392, A1590686, AA493647, A1929108, AA853213, A1922901, BE878725, AA420722, A1432653, AW167918, AW999049, BE965192, BE544111, BE963838, BG105895, BE964614, A1570909, BG107576, A1378123, A1623941, A1874243, D50977, BE963286, A1440263, AW088899, BE963918, BE072233, AW858243, A1366549, A1636719, A1539153, AL040011, BF813196, A1269909, BE964767,</p>

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HMIBF07	207	603528	1 - 1724	15 - 1738		AI760949, BF110122, AW304337, AV752105, AV752431, AV722241, AV753399, AV752788, BF038550, AI674641, AI631191, BF341595, AW954871, AW015922, AI637587, AA708886, AI279026, BE882675, AI860879, BG149555, AW958241, BE780764, AW151016, AW403088, AI124703, BE268585, BF108453, R93646, BE267741, AA158680, AA017518, BG028865, W25896, BG169140, BE348764, H08471, BE397221, AA598532, AI590038, AA158679, W49488, R94499, AA312333, W46240, AL046409, AA314321, AL036382, AI284640, AI679782, AW276842, AI334443, AF330238, AI431303, AW193265, AW303196, AW274349, AW473163, AI281881, AW029038, AA378475, AI350211, AW301350, BF475381, AI613280, AV710066, BF677892, AI345654, AI270117, AL041690, AW419262, AV734666, AL138455, AV760937, AI633390, AW276827, AW410400, AV763354, BE350475, AW963497, AW513362, AV728928, AW438643, BF939954, BF887977, AV762139, BF940837, BF854876, AI619997, AV974109, BF684828, AI963720, AW162049, AI688846, AI929531, AI053672, AL044940, AI471481, AW969629, AI341664, AV764241, AI375710, AA347073, AW302013, AW576391, AA526787, AW193432, AI962050, A720702, AV719316, BF724767, AV575742, AI625244, AI085719, BG249643, AI799642, AV682003, AI783494, AV728425, AW969694, BE206443, AW082108, AV760774, AW979031, BE139267, AI339850, BG236735, AV762050, AA713815, AI038785, BF241967, AW270270, AA526979, AV759580, AI305766, AV725423, AW518220, AW731867, AV760777, AI289067, AI273968, BG058664, AI370074, AI732865, BF668217, BG231262, AW975266, AI744995, AI370094, AV762098, BF916567, BF697673, AW406447, BF792870, AI358571, AW083402, AV764530, AV761631, AV762959, AW408717, BE042649, AI434695, BE049139, AA613345, BE139358, AI754658, BF681576, AI623898, AI801591, AL119713, AI634384, AW166815, AI754253, AI890570, AW872676, AI567674, AI969436, AW975425, AI341548, AI918421, AI889781, AW407578, AW083364, AV740801, AW276435, AW261871, AI281697, H71429, AI890928, AV761925, AW517388, AI917271, AA977743, AI345157, AA522942, AI133636, AW511743, AA101689, AI814735, AI192631, AA578861, AI564185, AW972628, AW169397, BE154617, BF130107, W79504, AI148277, AV764398, AA577906, AI611990, AW238278, AW872575, AI798473, BE327924, AA621858, AI865905, NS4894, AI590958, AI954260, AW088202, AW673241, AI890923, AV699480, AI251002, AV760042, BF984050, BE787738, AI859284, AL117471.1, AF017656.1, AF300650.1, U47924.1, AC009488.5, AF053356.1, AL031282.1, AF015151.1, D83989.1, AC004010.1, U57009.1, U57006.1, AL513008.14, U18391.1, X55925.1, U18387.1, U18392.1, U18398.1, AF077058.1, AL022316.2, U18394.1, U18393.1, U18395.1, AC079906.15, AF015147.1, U57005.1, X54175.1, X54180.1, X55926.1, X75335.1, X53550.1, AF015157.1, U57008.1, AL355481.12, AI277892.1, AC010680.9, U18390.1, AC004234.1, AC019014.1, AL137790.4, X54181.1, X54178.1, AC005000.2,
HMICP65	208	847403	1 - 2034	15 - 2048		

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HMJAK70	209	610099	1 - 785	15 - 799	
HMSBE04	210	709672	1 - 1382	15 - 1396	AW996615, AK026622.1, AY026461. 1.
HMSCL38	211	801919	1 - 2931	15 - 2945	AW517950, BF754163, AA503296, AV709806, AL334107, AA287363, AW023111, AA704101, AI809776, AI609972, AI380617, AV757289, AI733856, AA559166, AI066646, BE968744, AA169245, AA683279, AW327624, BF589824, AW769151, AA602906, AA659232, AI755202, AW341978, AA297666, AI978654, AA419403, AA180775, AW274078, AI801505, AA503019, AW963542, AI801482, AI344948, AC007637.9, AC006946.20, AL133344.28, AP003475.2, AC002996.1, AL031984.13, AC005954.1, AC012384.16, AL031311.1, AC020908.6, AC020983.7, AC011473.4, AL161896.16, AC026368.37, AC004963.2, AC015550.18, AC002432.1, AL137162.25, AP001712.1,

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			1 - 1653	15 - 1667	AL518114, AL519698, BE904985, AL518113, BE877622, AU134427, BG109888, BG254283, BG116328, BF055153, BF185789, BE858220, AW363489, AW363490, AA313794, AA778328, AA131134, AI741220, BF677097, BE974062, AW363495, AA700902, AW956451, BE018000, AI863031, AI310467, AW362923, BE775138, AV702523, AW043666, AI749475, AW969622, AW472851, AA436378, AI492642, BF355435, BF675755, BF355430, AI985776, AA676549, AI379078,



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HMSHU20	213	847410	1 - 2235	15 - 2249	N37036, BG231510, AI333675, N27521, N40336, AI337376, BG058736, W86648, N46466, AA522544, AI279721, BF222867, AI341807, AI651516, AI245138, H42155, AI262580, W86523, AL354889.14, AC003108.1, AL450263.15, AI400877.1, AL031291.3, AC005335.1, AC020916.7, AC039056.7, AL117382.28, AC002375.1, AC010494.4, AC007954.7, AC008946. 6.
HMSHY25	214	886183	1 - 2191	15 - 2205	BF822591, U63312. 1.
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HNECW49	221	639117	1 - 475	15 - 489	AL162497.20.
HNEDH88	222	815675	1 - 2059	15 - 2073	H90176, H90837, A1818453, AA251373, AW967651, AA583781, AC008481.7, AL139123.14, AC007688. 15.
HNFAC50	223	815676	1 - 1428	15 - 1442	BF888349, AW071725, AA743534, BE783671, N57590, N57604, AW305107, AV750698, BG003734, D45491, AA485566, BF358205, AA504633, AW026010, AW025529, BE512979, A1885090, A1475932, BF108880, AW050607, AA886335, BF368455, BF109416, A662803, A1375435, A1832600, BE906368, A1393408, A1056120, A1244837, A1056614, AW449834, AA657904, AA922036, AA643750, AA878578, AW197722, AW058170, AW748250, A1560410, AA485405, A1749095, BF436871, A1720931, A1446208, AF308287.1, AL137403. 1.
HNHFH34	224	722237	1 - 714	15 - 728	A1621215, AU130396, AU117962, AL536336, BE545203, A1564193, A1950251, BE505024, AV691847, AW271945, AU150350, A1560075, AU151943, AA603342, A1581089, AW338106, AA505767, A1561182, AA888065, A1625041, BG259991, AU139709, A1357213, AU151554, BF381062, BE707571, H29506, AA962704, BF850138, BF095205, A1911938, A1928495, AW630831, AA353956, BE539679, AA581961, BE697596, AV689379, AV692744, AV693249, AW957741, BF570808, BF034198, A1750915, AL530022, AA516054, BE698779, A1750267, BE932470, BE697644, AA211203, AV694821, AV696813, BE697638, BE004505, BF094204, BE697786, BE697633, BE697643, BG116851, BF096000, BF096003, AA104012, BF335705, A1493165, A1498683, BE172276, A1887429, AA249644, BF000235, BE173112, A1453000, AU152389, BF063673, AW362831, AA622090, BF381305, BF907535, BF907553, BF381312, BF888121, BF907547, BE896710, BE612958, BF877002, BF907621, AW603024, A1739109, BF907537, AA182641, Z42725, BF381330, BF907622, AA638984, BF381320, BF888124, AW608385, BE708178, BF907552, BE932758, BF907545, BF888140, BE746436, BG059191, AV736363, BF114930,

HNGAM58	225	688114	1 - 1142	15 - 1156	<p> DI9877, AA486796, AI697765, AI300924, AI873826, BF888089, BE963081, AF205218.1, AK001273.1, AB020657.1, AK001824.1, AK001625.1, AK023020.1, AK023123.1, AK000931.1, AJ012449.1, AL078644.10, AB050414.1, AL137640. 1. </p> <p> AW023672, AI284640, AL138265, AW500125, AW269488, AV763540, BF677892, AW472872, AW303196, AV763558, AW301350, AI307608, BF942454, AV760133, AA630362, AW088846, BF668217, AI568678, BE047069, AA469451, AV761188, AL046409, AV761608, AI708009, AV757425, AW731867, AV761403, AW502975, AW419262, AW274349, AV740801, AW327868, AV761317, AI963720, AI821271, AV760106, AW407578, AW238278, AW193265, H71429, AV760207, AI334443, AV758994, AA491814, AV763633, BF130107, AI613280, AI350211, AA493708, AI281881, AA661948, AV759580, AV713396, AI744188, BF592311, AI151261, AI431303, AV760937, AW438643, AV762139, AW576391, AW872676, AV761498, AV759329, F36273, AW473163, AW975425, BG058664, BG222131, BG171096, AV763354, AW276817, BG231262, AW088202, BG179731, AW270270, BF813686, BE672637, AA665330, AI754336, AU118745, AV757607, AI357551, AV728928, AL138455, BG249643, AV762015, BF942059, BF942223, AI345654, AI061334, BE154617, AL119691, AV759204, C06339, AL048925, AW276827, AW029038, AI254316, BE139146, AA579063, AI079389, AL047427, AW662543, AW406162, BF592200, AA623002, BE677379, AA074130, BG059568, BF337291, AI085719, AW575165, AI610159, AU147193, AI635818, AI814735, AI471481, AL040130, AW103758, BF965007, AI718446, AF330238, AV760614, AV762050, AV728425, BE350475, AA601876, BE018774, AW615709, BF841869, AI537506, AV725627, AV763255, BF475381, BF793766, AV760817, BG104686, AW021583, AW960468, AW576503, AI580652, AW265009, AV759239, AV658688, AU147800, AA581903, BE677158, AI289067, AV764307, AV760395, AW872575, AW339568, AV761631, AV764398, BG236735, AW969698, AA468131, AW969694, AW406755, AI828463, AV764530, AV763971, BG056088, AV759382, AV761786, AW474299, AV762959, BF851403, AI148277, AI791150, BF942311, AI565581, AI283911, AW574794, AF074677, AI340453, AI376100, AI570261, BG177715, AW410400, AV728410, AV761294, AV709707, AI446601, AV760774, AI471543, AI921649, BF680805, AI358571, AV764035, BE072475, AV710066, AI679782, AI281697, AI537955, AI270117, AW972879, AV762098, AI696962, AL041690, BF030810, AI355206, BE208673, AW833862, AI654588, AU145314, AW162049, AI341664, BF840676, AI929531, AV749274, F28204, AV731764, BG032943, AW504669, AA604362, AV725423, AI754658, AI076766, AI796627, AI375710, AV761941, AA610491, AV764659, AI921061, BE349302, AI873916, AI571512, AI358812, AL049757.14, AC005288.1, AL354872.9, AF109907.1, AL162272.10, AC000003.1, AP001753.1, AC005318.1, AC015540.9, AC087071.2, AC008736.6, AC068799.14, AL022316.2, U18391.1, AF348209.1, AC007537.3, AL138837.12, AC009470.4, AC004452.1, AF181896.1, AL034405.16, AC004787.1, AL161655.8, U57006.1, AC006337.4, AL353625.5, U18392.1, AL139346.6, U18396.1, AP001699.1, AC002470.17, AL445528.16, AL445123.11, AL031279.1, M37551.1, AL133419.15, AF077058.1, Z69917.1, Z82198.2, U67221.1, U67211.1, AC005730.1, AL117329.8, AL121891.22, AL445222.9, X54176.1, Z98048.1, AC004922.2, AP001594.1, AC008812.7, AL358334.3, </p>
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HNGDQ38	227	825389	1 - 1031	15 - 1045	AB058759.1.
HNGDX18	228	1145071	1 - 1411	15 - 1425	
HNGDY34	229	566863	1 - 988	15 - 1002	AC017028.11.
HNGEA34	230	815678	1 - 1089	15 - 1103	AP000531.1, AC003064.2, AC002471.5, AC005374.5, AL512624.4, AL391119.8, AL132657.33, Z83839.1, AC008443.8, AL049849.1, AP001229.3, AP001214.3, D87003.1, AL133173.19, AC026273.7, AC018696.4, AP000547.1, AL078472.3, AC002041.1, AF254983.2, AL163201.2, AC013734. 4.
HNGGA68	231	638116	1 - 571	15 - 585	AB052201.1, AJ236595. 1.



HNGIV64	232	561572	1 - 1033	15 - 1047	AA595803, AV653403, AI886084, AV684943, AV695480, AI363970, BF848469, AW380640, AV651029, AL049541.24, AC009475.4, AC020910.5, AC008556.5, AC067941.7, AC004967. 3.
HNGJB41	233	852178	1 - 1232	15 - 1246	BE256247, AF288742.1, AC004542.1, AF323731.1, AB051451.1, AF288741. 1.
HNGKT41	234	836061	1 - 1034	15 - 1048	AW862214, AW859811, AW862215.
HNGNK44	235	834949	1 - 1164	15 - 1178	T71076, T71014, BE767503, BE767495, BE767498, BE767497.
HNGNO53	236	836063	1 - 811	15 - 825	R37935.
HNGPJ25	237	834942	1 - 839	15 - 853	
HNHCT47	238	634691	1 - 607	15 - 621	AA469441, AA328289, AW972888, AW968156, AA502813, T09124, AI821722, AI732162, AI821172, AI792063, BE146613, BE146622, AU119400, AU119141, AA736713, AA572983, AL120694, BE392609, BF676104, AA598663, AI798242, BF346320, AA525409, AA834799, AW970987, AA525174, BE747883, AI636734, BF129921, BE395693, BF869362, BE677425, BF345228, BF345114, AA502536, BF747666, AA569179, AA482323, BE537881, BF871505, AV695478, BF340209, AI824589, AI567106, AV719084, AV763603, AA364869, AL079869, AA608741, AA468456, AA652059, AI309943, AL046620, AL041895, AA621838, AL031728.12, AC018828.3, AC022383.3, Z84480.1, AC011737.10, AL135839.15, AC083884.6, AC025594.5, Z83844.5, AC002470.17, AC007308.13, AL513008.14, AC009228.4, AC007597.3, AC006388.3, AL096841.6, AF109907.1, AL021546.1, AL133448.4, AC005098.2, AC004694.1, AC011461.4, AL133245.2, AC004815.2, AC004166.12, AC009488.5, AC004846.2, AL161756.6, AC009137.6, AC004030.1, AL157823.9, AL031685.18, AC015801.25, AC002369.1, AC020931.5, AC022384.4, AC010463.6, AC005803.1, AC018712.5, AC008569.6, AL035704.9, AL118502.38, AL049760.26, AC010378.6, AL353193.7, AC008755.6, AL138759.20, AC000360.35, AC007883.3, AC034193.4, AC007057.3, AC009475.4, AL049872.3, Z84486.1, AC005089.2, Z93020.1, AC011490.7, AC005871.3, AC009077.7, AC018808.4, AC007384.3, AC008745.6, AL132768.15, AL590762.1, AC008481.7, AC020954.6, AC010316.6, AC004967.3, AL356257.14, AC005972.1, AL096774.9, L44140.1, AC005052.2, AF031078.1, AL121586.31, AL391384.18, AL353748.13, AL133371.3, AC005081.3, AF030876.1, AC004073.1, AC011736.4, AC005067.2, AL159168.15, AL121920.21, AC013717.8, AL365364.19, AL022476.2, Z97184.1, AC004887.2, AL161670.4, AP001781.4, AC010319.7, AC002126.1, Z93015.9, AC009060.7, AL391827.18, AC026765.22, AC016027.15, AC007685.2, AC012170.6, AC008655.6, AL031651.33, AC016830.5, AC008551.5, AC005080.2, AC008040.7, AC004965.2, AC008521.5, AC011446.6, AP002007.4, AL133294.10, AL356915.19, AL157951.5, AC004760.1, AL121890.34, AL355871.5, AL136170.12, AC007917.15, AF053356.1, AL031681.16, AC011465.4, AC010999.6, AC084864.2, AL049576.19, AL132775.29, AP001760.1, AC004685.1, AP001725.1, Z75407.2, AC003070.1, AL354864.16, AC007881.4, AP000424.3, AC010271.6, AC010742.4, AL162430.15, AP002340.3, AL079342.17, AP000553.1, AC005841.3, AL096700.14, AC011495.6, AL137853.12, AC004799.1, AC025588.1, AC008267.6, AC011462.4, AC005914.1, AC087071.2, AC022154.3, AL139415.10, AC003043.1, AL121926.24, AC004491.1, AC011005.7, AL117381.32, AC026805.5, U91323.1, AL034422.24, AP003466.2, AL049709.18, Z68273.1, AL359092.14, AC005207.1, Z93930.10,

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HNHGK22	240	597451	1 - 895	15 - 909	AC073193.10, AC008269.4.
HNHHB10	241	634589	1 - 887	15 - 901	<p>BE744242, AI679782, AL138265, AW672999, AW970962, AW406447, AL135377, AL040921, AW088224, AA631507, AA601355, AL038705, AI284640, AV757425, AL046409, AI307201, AV763540, AW467347, AU140493, AL120008, AV704740, AI963720, AV763558, AL119691, AV701844, AV761403, AW148507, AW055226, AU145083, AU148007, AI246796, AV701613, AA680243, AV760207, BF725504, AW088846, AI431303, BF915247, BG249643, BF915722, AL037683, AV761745, AV759204, AW662543, AV700988, AL138455, AI625244, AW600804, AA587604, AI357778, AI732120, AV755677, AU152722, AA812058, AA394271, AI357823, N48230, AW472872, BF854096, BF915628, AW500684, BF827410, AV759580, AW833862, AI270117, AW023672, AI821714, AI792133, AI791913, AA593752, AV682003, BF680395, AI801482, BF241967, AV758790, AI282479, AW979060, AW956640, AI305766, AA490183, AV732891, AA593471, AV758994, AV728425, AU158906, AW996768, AV761498, AW513015, AW419262, BF679256, AA501809, AW502975, BF337291, AI281881, AI755214, AI821785, AV762645, AW963497, AW819125, AV700498, AI133102, AV761188, AW410400, AV761608, AU147800, AI587583, AL041690, BF030810, AI567076, AL119984, AV702857, AV764235, AC006275.1, AL023807.6, AL121949.13, AC007956.5, AC005000.2, AL136981.22, AL034417.14, AC020629.6, AC020931.5, AC008733.7, AL354798.13, AC004820.2, Z85987.13, AC007014.1, AC005037.2, AC008397.7, AC022383.3, AP001705.1, AC009086.5, AL135839.15, AL109804.41, AP002007.4, AC005077.5, AC009194.8, AC008764.7, AC010654.8, AC007226.3, AC008848.7, AC005280.3, AC011895.4, AL162831.5, AL391827.18, AC008269.4, AL137244.28, AL033529.25, AL049709.18, AC011446.6, AL049780.4, AC010316.6, AC067722.21, AP000240.1, AP000034.1, AC006111.3, AC005531.1, AL445237.16, AC069548.4, AC022384.4, AC018641.3, AL161756.6, AP001713.1, AC004531.1, AC005079.6, AC009516.19, AC072052.6, AL050341.18, AC009314.4, AC004643.1, AL590762.1, AB038653.1, AC010530.7, AL121834.20, AC024561.4, AL135927.14, AC007227.3, AL138787.11, AC022148.5, AL355984.11, AL022326.1, AL135901.23, AC005071.2, AL353748.13, AC018828.3,</p>

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HNTMH79	244	801921	1 - 908	15 - 922	AL520064, AA522435, BG235524, AI583193, BF029884, AA425038, AI580066, AA602386, AW027266, AI201750, AA495955, AA535913, AI140976, AW512793, AI400417, AI769557, BG230609, AI131500, AI810252, AI674407, AA447953, AI076831, AI762755, AI686492, AW003027, BF476313, AI147015, AW027517, AW305023, AA653361, BF001486, AW513839, W87475, AW170527, W40356, AA459267, AA514642, AI276539, AI208079, AI292269, AI659802, AW292543, AI346823, AI767262, AA599024, AI027947, AA733190, AI400960, AA932457, AI367819, AI038298, AI149913, AV703226, AI350089, AA678680, AI620623, AI049656, AI804757, AA136872, AI524491, AA040672, AW007575,

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HODAG07	245	655356	1 - 886	15 - 900	AW150987, AW073096, AI433008, AW840663, BF961983, AI064787, BE061322, BF310123, BF889059, AW079659, AW840960, AI887241, BE902562, BE901529, BF337291, AW833044, BF850931, AW879550, AW995665, AV703956, AV655096, AA688217, BG105511, BF918950, R46841, AL043289, BF854113, AL042753, AI745359, AW081103, AI368745, AW935121, BF676981, BG249643, AA047715, AV759518, BF996665, BF925370, AA853473, AA618452, R56583, AV738534, AV652027, AA702729, BF724699, AI821259, BE277210, AL040038, AI669000, AW880044, AI097143, AA738097, AI805349, BE070818, BF868994, AL138455, AA601376, BE156651, AW832960, BE070711, AI609192, BF681373, AW083846, BF857083, BG107514, BF342223, BF679187, BF347791, AW861564, AI039478, AI334443, BF725761, AI358408, AI865324, AV725208, AA634071, BF764474, BF888322, AI540587, AW854458, BE276480, BE378571, BF764476, BF826444, AW963750, BF347740, AL040072, BF678165, AA129746, AI732975, AI561147, AV758600, AI053520, AI111171, AI345797, AW833981, AA016226, AL043052, BE150580, AA805966, AW812695, AI016729, BF343686, BF726425, AL038607, AV726088, N52358, AI133297, AV725012, AV729389, AA019257, AW301995, AL134242, T27702, AV761362, AF075343, BE154678, AV726091, BE889486, AW815297, AW900503, AA581263, AC004061.1, AL451075.15, Z83821.1, AL020991.1, AL392084.6, AC016257.22, AB041731.1, AL109919.18, AL133320.8, AC009961.11, AB042031.1, AP002529.1, AC005553.1, AL031904.1, AP000486.5, AL358815.12, AC011484.4, AL163853.4, AC000119.1, AL445928.8, U91321.1, AP001347.1, AC072052.6, AC016903.3, AC009964.11, AC007055.3, AC002542.1, AC007628.3, AL049641.10, AC004537.1, AC023469.6, AC006112.2, AP002076.3, AC087863.9, AL035404.20, AL079340.7, AC009309.4, AC006478.2, AP001732.1, AP001660.1, AL357518.15, AL391153.3, AC009743.1, AL512454.6, AF222856.1, AC009242.5, AC010723.3, AF222854.1, AL136976.11, AC008067.3, AC018904.6, AL031407.3, AP000782.3, AL356432.17, AL390966.14, D83989.1, AL354942.10, AL445189.7, AC018636.4, AL355881.15, S75201.1, AL390802.2, AC010359.5, AL022170.1, AL391500.13, AF302689.1, U67233.1, AP001873.3, AL353716.18, AC004513.1, AL031390.4, AC010478.5, AL033521.2, AL354674.5, AL160155.19, AF168787.1, AL133329.11, AK026793.1, AC008491.6, X58156.1, D38178.1, AC010522.3, AL356775.14,

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HODBB70	246	520196	1 - 590	15 - 604	AW079904, AW207285, H18498, R37566, BF852425, BF102683, AC006322. 2.
HODBV05	247	825283	1 - 1105	15 - 1119	AA812678, AV751994, R44969, T28237, AW880897, BE083400, AI203435, AC006344.2, M95712.1, X65187.1, AC020717.3, X65188. 1.
HODCZ32	248	836069	1 - 913	15 - 927	BF530072, A1554758, AW819125, BF445242, AA478355, AI049508, AA643786, AF129408.2, AF064861.1, AL163279.2, AL121601.13, U96629.1, AL356379.10, Z93930.10, AC011471.6, AL022323.7, AC007383.4, AC005512.1, AL157823.9, AC005522.2, AL132639.4, AC010412.7, AC007546.5, AL035420.15, AC018897.4, AC007021.3, U91325.1, AL022336.1, AL356257.14, AL121957.15, AL035495.13, Z94801.1, AF196969.1, AF288742.1, AP000359.1, AB004907.1, AL096701.14, AL161731.20, AC004797.1, AP001727.1, AC007731.14, AC008569.6, AC005803.1, AC090939.1, Z83856.1, AC005500.2, AC073138.3, AL512347.14, AC022148.5, AF217403.1, AF001549.1, AC007842.1, AF200923.2, AL031685.18, AC008736.6, AC011495.6, AC020915.6, AC018758.2, AC011816.17, AL161747.5, AC004033.3, AC006946.20, AF200465.1, AC018695.6, AC009509.7, AC009247.12, AL132765.38, AL138962.16, AC010422.7, AC002430.1, AL359236.4, AC008806.4, AL139113.21, AC004980.4, AC006028.3, AC009068.10, AP001710.1, AC007384.3, AL157791.4, AC007172.6, AL024498.12, AC005257.1, AP000497.1, AL354864.16, AC022405.5, U52111.2, Z98200.8, AC003957.1, AC011551.3, AC024163.2, AC005071.2, AC011510.7, AC005081.3, AL356113.8, AL078590.28, AC004656.1, AC021999.4, AP000008.1, AL137818.3, AC004531.1, AL022396.1, AC020917.4, AC020754.4, AC010326.6, AC078846.2, AL355094.3, AL031284.9, AC012309.7, AL035458.35, AC006014.2, AC007192.1, AC073184.5, Z98884.11, AF109907.1, AC011465.4, AP000704.2, AC010271.6, AL354942.10, AL023775.1, AL133367.4, AC005411.1,



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HOFNU55	249	897611	1 - 1351	15 - 1365	<p>AA489724, BF317222, AA454964, BG151247, BF968493, AW071349, AI349772, AA902194, AA447844, AI702406, BG168696, AL135661, BF812933, BF343172, BE047863, BF085952, AW827203, AL046849, BE048071, AL036146, AV681949, BF726421, BG036846, AW274192, AL121270, AI873731, AI348897, AV681668, BE887488, AW162071, AL047042, AI349645, BE781369, AI538716, AV655645, BG260037, AL514919, BF971016, AW238730, AW117882, BF885675, BF792469, BG058208, BE964812, AL514691, AL513911, BF883916, BG114104, AI568870, AL047763, AA100215, AI758437, AW301409, AI568855, BF724691, AL036396, AI340582, AI349933, BG250190, AI868831, AI521012, AW071417, AI597918, AW089572, AI433976, BF795712, AW827249, BG112879, AV727776, AW195957, AI540832, AI613017, BF970093, AI439087, AI250293, BF792099, AL120736, AI678302, AL036802, AI499463, AI249257, BG031815, AW103371, BE964700, AI436456, AI281779, AI857296, BE047952, AI349004, AI702433, AI440426, AL040243, AI433157, BG179993, AI345735, BE048026, AI699857, AI862142, AL513553, AI633419, AL513907, AI498579, AI866002, AI499131, AL513837, BG259801, AI597750, AL044207, AV711509, BE963035, AI567351, BE968552, AW087445, AI500077, BF882343, AL045500, BG058398, AW075351, AW148320, AW074993, AI866608, BE966388, AW268253, AW999049, AI312152, AW068845, AI349614, BG032208, AI349937, BG108147, BE172767, AA613907, AL513753, BG180996, BG252929, AL043326, BE877769, BG178809, AI445432, AI635461, AI440239, AI271786, AI625079, AI281762, AI224992, AI497733, AI500659, AI580984, BE018334, BE965556, AI590128, BG164371, AI800453, AI800433, AI682841, AI469811, AI609592, AI499393, AL048871, AL119049, AA508692, AI687728, AW169653, AI564719, AI275175, BG110684, AI802542, AL119791, AI282281, BF344652, AW026882, AW303152, BF817392, AI269696, BF817926, AI620284, BE018711, BE777769, AV756560, AI631107, BG029399, AL513693, AI610645, BE963968, AL121365, BE876033, BG121222, BG108324, AI343112, BF340031, BG104782, AL513597, AI282655, AI283941, AI671679, AW950035, BG257535, BF727212, BE904178, AI539771,</p>

AL515191, AW183130, AI349598, AV710479, BE904051, BF054789, AI445025, BF970446, AV757639, AL513803, AV735353, BF812438, BG109270, AW104724, AV654624, AV717179, BG179633, AI624668, AI920968, AI754897, AV758668, AV708119, AI690835, BE965095, BG252914, AI570384, BE048081, BE785905, AI608667, AA572758, AI349256, BF344479, AI686926, AL119748, AV757598, AV706520, AV757737, AV682672, AV681857, BE048179, AV762488, BE613622, BC003087.1, AFI26062.1, AL157431.1, AL133640.1, AF090901.1, AL389978.1, AL049452.1, AL390167.1, AB056420.1, AF125949.1, AF090900.1, AL136787.1, BC008387.1, AL133016.1, BC008417.1, AL136586.1, AF090943.1, AF218014.1, BC003687.1, BC007021.1, AJ242859.1, AF090903.1, AL050146.1, AF090896.1, AL133606.1, AB048953.1, AK026741.1, AK026865.1, AL512733.1, AF078844.1, AL080060.1, AB055303.1, AB049758.1, AL050116.1, BC008365.1, AB063046.1, AL136892.1, AF104032.1, AL359596.1, AL442082.1, AB063070.1, AB047615.1, AL117460.1, AL442072.1, BC003683.1, AL137527.1, AL110221.1, AB056768.1, S78214.1, AL050393.1, AL117457.1, AF090934.1, BC008488.1, AL050149.1, AF111847.1, U42766.1, AL049466.1, AL359601.1, AK026608.1, AB048964.1, AL162083.1, AL136749.1, AK025339.1, AL136789.1, AB060887.1, AL110196.1, AK000212.1, AB019565.1, BC001967.1, AL133075.1, AF106862.1, AL049938.1, AL050108.1, AK027868.1, AB063008.1, AL049314.1, AL136799.1, AK025084.1, AB060916.1, AK026045.1, AB047801.1, AB055361.1, BC006807.1, AL122050.1, AL122093.1, AF219137.1, AL162006.1, AL080137.1, AK025958.1, AL133557.1, AK026855.1, AB056809.1, AL133080.1, AL096744.1, AL133093.1, AL137283.1, AL050277.1, AL080124.1, AL136768.1, BC002733.1, AK026744.1, AB060863.1, AL122121.1, AL389982.1, AB060908.1, AL133565.1, AK000618.1, AL136844.1, AL117394.1, AL122123.1, AK027096.1, AL512746.1, AB060912.1, AL137459.1, AL137557.1, AB055368.1, AF091084.1, AB062938.1, AK026592.1, AK025772.1, U91329.1, Y16645.1, AFI25948.1, BC004556.1, AF146568.1, AK026533.1, AF207829.1, AL512754.1, AK026784.1, AF097996.1, AL359618.1, AL512718.1, AL110225.1, AB048954.1, BC001045.1, AF271350.1, AK026452.1, X82434.1, AB051158.1, AK000083.1, AB060825.1, AL050138.1, AL359941.1, BC006195.1, AB060826.1, AK026647.1, AK000445.1, AL512719.1, AB055366.1, AK000137.1, AK025092.1, AK026583.1, AK024538.1, AL049464.1, AL133560.1, AK026542.1, AL353940.1, AK026504.1, AL117583.1, AL512689.1, AB052191.1, AK000652.1, BC007199.1, AK025491.1, AB060852.1, AL136928.1, AB055315.1, AK026927.1, AL359615.1, AK027113.1, AL137550.1, AF225424.1, AK026532.1, AK026534.1, AL049300.1, AK000614.1, AK026959.1, AL117585.1, AK026480.1, AL049430.1, AF177336.1, AK026086.1, AK025391.1, AK026353.1, AB049892.1, AB047904.1, AK000432.1, AL050024.1, BC002839.1, AK025414.1, AL117435.1, AL136845.1, AL049382.1, AB063093.1, BC008070.1, AK027204.1, AK027164.1, AK000323.1, AK025967.1, BC008899.1, AK026642.1, AB048974.1, BC004951.1, AB052200.1, S61953.1, AK024524.1, X65873.1, AL353594.13, AL137648.1, BC008485.1, BC008983.1, Z82022.1, AP001873.3, AFI83393.1, AL157482.1, AK026947.1, AK026630.1, AL122098.1, AK026528.1, AL122110.1, AL133113.1, AK025484.1, AL137463.1, X72889.1, AK000647.1, AL512761.1, AL137271.1,				
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HOGBF01	250	772573	1 - 1464	15 - 1478		<p>AA716165, AW014086, AI675797, AI915560, AI093476, AI619556, AA346257, BG170965, AI674463, AI656676, AW962578, H26720, F32296, F33070, F24055, F23333, F32966, AI370391, AI446003, AI560806, AA857847, AW130863, AI282355, AI241901, AI889818, AI611743, AW243878, AI619502, AI630928, AI953765, AW083804, AA504514, AW081179, AA814782, BE967273, AI554821, AI620056, AI285735, AW262983, AI355849, AI245332, AI018686, AI635464, AW183620, AW020095, AL036187, BE966547, BG105445, AL036509, AI680498, BF970652, AW149869, AI433611, BG181012, BF914091, AI271796, BE621256, AV702932, BE962857, AI824557, AA555145, AA449768, AL513697, AW089009, AI368579, AW020592, AW130403, AL514823, AW022494, AW020288, BE785348, AL513817, BG108350, AW073996, AA937558, AV724929, AI863321, AI684127, AW075648, AW082997, AL514035, AI811911, AW168485, AV705811, AW083825, AI972170, AI537045, BE964576, AV734654, AI815239, BE964792, AI434833, AI301507, AI687168, AI289791, AL513693, AA808175, AL513911, BF763498, AI918634, BE965014, AI623736, BE965891, AI952249, AI862139, AW081343, AI923768, AL513809, AI050666, AI367210, AW170725, AA835947, AW025412, AW082040, AW025279, AW079045, AL513789, AI432532, AI874189, AI289608, AI536685, AI680113, BE965031, AW189268, AW827211, AW082623, BE965053, AI560023, AI439762, AW029611, AI978720, H89138, AI801592, BF339322, AA603709, AV659322, AI925404, AI627714, AW008090, BE735370, AW075519, AI866691, AI559737, AI921753, AI718161, AI582932, AI872545, AI446809, AA904121, AI251434, AI784214, AL514357, AW193467, BF338782, AA983883, AA480074, AW075482, AL514473, BG179586, AL514557, AI804983, AI697045, AL514691, AI924971, BF338027, BE299813, AW085373, AA514684, AL513553, BE966571, BE963909, BE964150, AI915207, BG178911, AI469516, AW151835, BF968679, AI475394, AI568114, AL514627, AW151850, AI457369, AI824648, BF038804, BE965481, AI375730, AW085667, AW192245, AA493923, AW059713, BF025686, BE878953, AI640379, AI498579, AI888665, AL038778, AW162189, AL515235, AI744243, AI691088, AW073868, BE964967, AI933940, BE613727, BE875442, AL514929, AW161202, AI961590,</p>
HORBS82	251	638293	1 - 1111	15 - 1125		

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HOSEC25	253	688055		1 - 1538	15 - 1552	AV703315, AA205852, AA205844, AL037839, AW070702, AI565552, AW959962, AA973910, AW959960, AA348808, AI354705, AA205854, BE162539, AI651069, AV713064, BF437354, AI767622, AW052035, AA101964, AA026741, AW069227, AI634187, AW269504, AI457313, AW674631, AA099631, AA232994, AA243696, AW195341, AW341978, AI823308, AI733856, AW188986, AI053784, BF941940, AI049630, BF746395, AW805547, AI753365, AI860535, AU144540, AW081303, AV655282, AA808741, AW804959, AA584484, H60935, AW468009, AA169245, AW167154, BF681619, AI798493, AI587583, R44593, AV754716, AW972919, BF991881, AI598003, AI587565, BF991882, AA599080, BG223550, AF287262.1, AL359846.11, AF275948.1, AC010087.3, L78810.1, AC005081.3, AL132838.4, AC005231.2, AC006435.7, AC011461.4, AC010422.7, AC005052.2, AL161747.5, AC008569.6, AC011487.5, AF312032.1, AC005625.1, AC008403.6, AC018663.3, AC009131.6, AC010530.7, AC000360.35, AC011491.5, AL354935.23, AL121658.2, U95742.1, AJ400877.1, AL024498.12, AC005399.19, AC007345.5, AL117381.32, AC016025.12, AC011485.6, AC006211.1, AL121809.6, AC004840.3, AF283321.1, AC008068.4, AL050318.13, AC005736.1, AP000783.4, AL445071.14, AC003982.1, AC004858.2, AL033529.25, AC004448.2, AL096791.12, AC011895.4, AL138976.5, Z93023.1, AC006357.5, AL121753.30, AC002395.1, AL356257.14, AC005519.3, AF288742.1, AL132768.15, AC003690.1, AP001760.1, AL022336.1, AC009412.6, AL160163.24, AC010553.6, AC004883.2, AC004913.2, AC007993.15, AL109743.4, AC004166.12, AL139286.13, AL121992.24, AL121652.2, AC011444.5, AL449305.4, AC004531.1, AC007383.4, AP000555.1, AL162615.13, AL391137.11, AE006467.1, AC020916.7, AC018711.4, AC008760.6, AL161656.20, Z93015.9, AC005409.1, AL080243.21, AC009247.12, AF196779.1, AC007226.3, AC008764.7, AF168787.1, AL137162.25, AL139316.5, AL022163.1, AC012476.8, AL035072.16, AL139415.10, AP001725.1, AC000026.3, AL079342.17, AC079602.15, Z98051.6, AF053356.1, AJ246003.1, AC007216.2, AP002453.3, AP002007.4, AC005484.2, AL391827.18, AC013436.5, AC011471.6, AC002115.1, AC007546.5, AL121601.13, AL031281.6, AL050307.13, AL162430.15, AC087071.2, Z98742.5, AC011559.3, AC006084.1, AC005971.5, Z99716.4, AC005049.2, AC004972.2, AC010319.7, AC008745.6, AC004000.1, AP001719.1, AL138756.23, AL031427.15, AL049829.4, AC009077.7, AL353748.13, AL135905.6, AC005412.6, AC011510.7, AL109825.23, AC010311.8, AL034420.16, Z83844.5, AP001688.1, AC021016.4, AL121751.12, Z85986.1, AL159977.10, AL137787.11, AL354720.14, AC007371.16, AL121653.2, AC004966.2, AL049872.3, AC006430.22, AC002347.1, AC011449.6, AL033367.5, AC006132.1, AL353691.12, AL355385.15, AL136979.16, AF017104.1, U95743.1, AL050349.27, AC006285.11, AP000501.1, Z95114.19, AC011475.6,

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HOSEI94	255	795132	1 - 1753	15 - 1767		AL534230, BF794731, BF981787, AV717490, BF969851, BG121979, AA778721, BG110730, BF984085, BG110467, AW955122, BE622018, AL1309326, BG249314, AW577402, BF667856, BF030670, BE973851, BE223046, AI923088, BF693523, AW157189, BF977423, BG248874, AV719596, BF672688, BF692519, BE072714, BF029550, BF208546, BF672920, BF665810, AW999143, BF382326, BE567723, BE622665, AW009559, N21676, BF695168, AW277241, BF130275, BF435550, BF029462, AI015567, BF700283, BF671831, AA056157, AV722823, BE936913, AA142926, BF668174, AA935517, BF697474, BF240047, BF669889, BF698200, BF102617, AI340068, BF699736, N71214, BF672305, AA046446, AI890415, BE568028, BF508414, AI760248, BG231598, BF698298, AW956756, AW629335, AI421490, AI423473, AA576688, BF445396, AA405935, AI342399, AA946956, BF103939, BF570584, BE865772, AA826534, AA143149, AV708510, AA313266, AI803454, AW403205, AA125818, BF693047, AA594414, AA233629, N22011, BF574369, AI862039, AW749919, AA315935, AW148924, BF212941, AI245757, AI953431, AW374039, N80237, BF243837, BF570931, AA488928, AW304989, W33046, AA782164, H89121, T78059, BE564522, AI344475, AA074821, BE834475, AI148049, AI707964, AW163161, BF208070, BE566545, AA864308, AA702036, AA058701, AA034997, BE565093, AW057651, AV682327, AA045662, AA084570, AA172038, AA743021, AW438849, AI708566, AA135017, AA045663, C05053, AW268698, AW078896, AA312059, AV683078, AA894905, AA047840, AA586355, AV687492, AA947891, AV652365, AW820932, N31289, AA724345, AA878972, AA053980, BF954676, AI024387, N31083, AV658627, BF904383, AI631228, W38328, BF126440, AL048109, BF909276, BE070037, F13274, T59457, BE379913, AA831417, AA172290, AI905071, AA125949, H06542, AA018173, H06484, AW337421, T06616, AW571396, AA837059, T77300, AW295581, Z39935, AA759329, R39702, F10872, AA057237, T36230, BF208394, H89228, AA373169, BE763894, AA598442, AA233777, AA056096, D53439, AA035459, T19033, AA484066, R96192, BE708221, AV693255, AA693386, AL048108, AW392317, AI090106, AA732389, AW150491, Z43869, AI270737, T18978, R38185, W04596, BE172519, Z37004, BF512309,

HOUCA21	256	655359	1 - 1115	15 - 1129	AA383381, AW969664, AA501472, AA483236, AF126156, AA749100, BE163666, H41069, BE168419, AA079574, AI200780, BC005283.1, AF261138.1, AL136598.1, AF061739.1, AJ251095.1, AA079526, AU128438, BE730087, BE384458, BF508985, BF686525, BF207368, BF206241, BE737970, AA018892, BE737581, AL353967, BF317209, AA306257, BE565270, AW581996, BE739366, AI206455, BE622117, AA725014, BE738570, BF964437, AA489537, BE745782, AW848363, BF677217, AW812945, BF438201, BG036665, BG259790, AI291274, BF814725, AI473475, N92703, AA548356, AV762033, AW872461, AI247199, AW276827, BE156019, BG151598, AA347034, AA362511, AV738285, AA347368, AI653636, BE045001, AV760760, AV757369, AA643455, AW816252, BE065673, AA483771, AI559705, AA552843, BF902055, AI751216, AA496343, AI270002, AI270248, AA376519, AL038705, AW731867, BF217110, BF871137, AW196064, AA552856, AA405453, AI537955, BG260454, AA954924, BF692524, AW002350, BG178784, BE788081, AA747594, BF347740, AI783898, AA714453, AI859438, N27763, F17891, AI568678, AV754623, BF347791, N68051, AA568778, AA502720, AI801591, AW731802, AL036037, AW503014, AV713127, AV735305, AA309257, AI446638, AW474299, AA643974, AW973325, AW103981, AI298710, AA219225, AA601356, AI871722, AI499054, AV690256, AA309841, AL119691, AW873530, AA669840, AI624631, BG236251, AA640772, AA581903, AA847069, AV740801, AI589461, AW970877, AW302013, BF977376, AA026679, AW168520, AW591487, AI634384, C06119, AV729833, AA340747, AV757341, BG231767, AV704536, AW973324, N94233, BF677684, AA715255, BF346912, BE973738, AA715267, AW890364, BF347038, AI625647, AA788901, AA446544, BE139146, D51681, AI583594, AA580808, AA587604, AI580652, AI801600, AW504623, AI436677, BF836052, BF838326, AA244022, AA828749, AI559251, BF841212, AI243584, AI8322909, AI262909, BF880649, AW816518, AI472222, AW960545, AA812684, BE154678, AA730477, BF793766, BG003382, BE973754, AW866226, AI798473, AV760777, BE206472, AI133164, BE164494, BE378740, AW169537, AI933534, F03525, AA070345, AI690698, R86151, AV711275, AW519279, AV732792, AA832145, R78962, AI301713, AV739452, BG115611, AW969866, AA126035, AW067900, AA856954, AA357937, AA126051, AI692808, AL038072, AI064864, BF831353, AL589182.3, AP000527.1, AL163201.2, AK022914.1, AC010388.5, AL035690.10, AL049875.2, AP000347.1, AL109653.14, AC010202.6, AL157380.15, AC015553.21, AL121983.13, AL020989.2, AF121898.1, AL161723.12, AP001573.3, D87022.1, AC009479.4, AL008721.1, AC004673.1, AC073910.20, AL355812.23, AL022310.1, AC004451.1, AL359641.10, AC024730.7, AL031651.33, AC026126.19, AC003666.1, AL139384.16, AC063947.30, AC009971.8, AL035397.4, AL022151.1, AL049781.5, AL035414.30, AL031597.7, AL049697.9, AC009046.4, AL512624.4, AC010528.8, AL445466.9, AL050320.19, AC023108.4, AL513191.4, AL133512.10, AL035695.17, AP001359.4, AC004455.1, AC009490.10, AL049836.3, AL359265.8, AC006353.3, AC023344.4, AL023803.3, AL158055.12, AP000550.1, AL121575.24, AC008018.20, AL035087.20, AC005822.1, AC022013.3, AC018507.3, AC006377.3, AC006288.1, AL445243.3, AL033517.1, AC003954.1, AC022215.4, AC002051.2, AC024567.6, AL512782.6, AL391294.16, Z97988.1, AC073193.10, AC016831.1, AP001672.1, AC022217.5, AL391156.3, AL450338.5,
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HOUDE92	257	580866	1 - 1270	15 - 1284	BE736091, BF237553, BE781264, BF686547, BE313480, BE872070, BF313936, AI138711, AI348027, BE502126, BE258631, AA524244, AW873570, AI982983, AI367855, AI052179, N90758, AA325647, AW419076, AW873111, AW008195, AI304671, AI367495, AW964887, AI609692, AA019213, AI279349, AI581275, AI224904, AI141287, H14110, H41440, AI017367, H29060, H29163, AA482386, AI471043, AI742262, AI262559, H52568, AA872715, R60248, H06091, AI041676, BE856821, H86160, H86771, AI241156, AA872384, R60761, AW131262, T31006, H56455, H95225, AA535480, AA678522, AA953998, R93546, R47352, BF968234, C04826, N39943, AA779062, T31180, H69216, AA017105, AA738315, AA019233, C04344, C05015, H17526, R99865, H84704, AW025505, AA057567, N72695, H86419, W02476, N27200, AA001522, AW194286, AI264419, AI220672, AI290418, T30927, AI620442, AA985424, R49316, H86772, AA725465, R91429, R93547, AA017106, AI074855, H95701, H69217, H95226, AW188581, AI678424, AA057566, AA326095, AA976949, H56456, W57713, AW166317, Z42112, AA775239, AI864069, AA918031, H85105, AA015626, AA977988, AA429622, R99866, H14085, AI000910, AI431360, Z38375, W57838, AA015625, R57558, AI949351, AI262422, AC005865.1, AF217967.1, AK027366.1, AC005912.1.
HOUED72	258	858547	1 - 819	15 - 833	BF982418, BF205031, BF971012, BF206215, BG251849, BE900647, BF528134, BF663920, BF792504,



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HOUFS04	259	771564	1 - 2913	15 - 2927	AL537447, AL537448, AU120015, AU131841, AU141085, AU134821, AW612291, AU124089, AU139563, AV727622, AV727623, AU133175, BE788006, BF185243, BG257827, AU136898, BF184853, AI627486, AV705533, BF590192, BF577029, AL118692, BG257588, AU153504, BE326681, BF028316, AU154556, AL135492, BF431327, AW369693, BF216161, AI740778, AW239374, AW150161, AU150952, BE972535, AI274815, BG011960, BF210890, AV749930, AI091535, BF241838, AA888926, AL121256, BF104153, AI795954, AW513116, BF185887, AI433845, AI343701, AU158077, AI277331, AW268991, AA680329, AU155657, W28248, BF594656, BG000296, AI457635, AW661960, AI263881, W28288, AI434627, AA010836, BG012652, AW129101, AV748375, AW302270, N52145, BF219378, AL518583, AW297250, N75868, AA857253, AL120585, AW994991, AA011013, W26416, N22080, AI015118, H02915, H39966, AI039206, AA449595, AV684996, AL518582, AA953973, AI440447, AA016111, H03822, BF825307, R84685, BE702037, R84707, AA019431, BF825558, AI275797, BF826197, AA330443, R76642, R76568, BF844855, BG011970, AL120540, D79415, R85665, R84949, AW296468, AI539211, H95551, H28472, R33103, AI696200, BF210071, T54671, AA604416, R33200, AA011115, BE177754, BE177752, R85648, AA058782, BE177756, BF058858, R31662, BF825522, AA016056, BF054961, AW628524, BE218727, T54758, AW609383, AW609416, AA020805, AA419376, D62124, BE541542, AA058678, AA021571, AI610553, X85615, AA913581, BF825480, BF793324, X85616, BF970449, BF814447, BG180996, BE548914, BE536058, BF038131, BG256592, BE880182, BF032910, BF822127, BE874133, BG029053, BG257807, BG163618,

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HOUHI25	260	888279	1 - 1235	15 - 1249	<p>AW274757, BF979499, BE875104, AV728303, BF671975, AV727326, AW631495, BF983857, BF248008, BF115795, BF212520, AV717938, BF571136, AV728044, AA976644, BF679046, BF477635, AI907366, BF570689, AA903720, AW972361, AA524665, BE220972, AI984786, BF979139, AI692731, BF213370, AI907373, BE439966, AI268254, AI907368, H08416, BF700421, BF541919, AV705494, AW978976, AI332994, BF540780, BF247753, AI907374, AA826200, AA701660, AI656122, AI657191, BE763093, AA936326, BF572170, BF131794, BF195177, N79377, AV715209, AI950823, BF093269, N88408, BF439990, BE159589, AA772723, N86348, AA399432, BF575806, BF984268, AW206085, AI268253, AI421859, BF680498, AI916469, BF344634, AI420669, BF670000, BC008478.1, AF126020.1, AC004839.1.</p>
HOVBD85	261	827362	1 - 1115	15 - 1129	AC009039.6, AP001721.1, AF015262.2, AI229043.1, AC008015.5.
HPCAL26	262	762822	1 - 3083	15 - 3097	<p>BG164171, BG171313, AW338908, BE327883, BF058325, BE856282, AL525344, BG027433, AA621714, AL047905, AW780148, AI633775, BE973735, AW438611, AI755212, BF381979, AW337238, AI337968, AI963595, AW572336, AA432021, AW471145, AW069566, AA448477, AI936887, BF108841, AI829408, BE748629, AI042324, AI955816, AI421409, AA758227, AA814190, N91448, BF030663, AW192439, AI683517, AA417975, AI129364, AI561083, AA418135, AI088536, AW628520, BE327874, W72280, BE878275, AI348236, AI088467, N26180, AI628017, AI066421, AI346288, AI142951, AI308778, AI446338, AA458899, AI078536, AI346382, AI753070, AA923036, AI431409, AI087120, AI341640, AI567761, AI371263, AI754690, AI285250, BE619821, AA630948, AI354829, BE620033, AW294799, W45027, AI902379, AI537262, AI866883, N27411, BE876666, BF338393, AI963351, AI081820, BE395375, BE620777, BE906942, AI811301, AI627940, AL538418, AA602460, BE548617, BF038519, AW205903, BF893012, W76307, AA701166, AL525384, AW023777, AW956752, BE122762, AA128212, AI094190, BG163634, AI371264, AW856743, AW380612, R81003, BE905099, N23359, BE619502, AI589929, BE905025, AW469305, AI254707, N67744, BE619375, AA961234, BE906749, BE784570, BE909607, AW387716, BE904894, BF695306, W25857, AA134565, AW04064, AW802015, BE673511, R76732, AI392841, BF509258, BE503655, BE880509, AI299995, AA304323, AI074674, BE788330, AI086914, AA383490, AW630488, AA977524, AW802237, AA296648, AA431796, AA047280, AA813746, AW236745, AA193605, AA127172, AW080334,</p>

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HPEBA84	263	753957	1 - 1146	15 - 1160	AV702197, AW964983, AI283912, AV688589, AA679863, R77836, AA112690, AI686145, AA342049, AA658167, AA112689, AA640275, AA342050, BF876992, AL161799.19.
HPFBA54	264	635539	1 - 821	15 - 835	AU121120, BF037518, AL133934, BF969464, AU137403, BE145195, BF210705, BF104734, AV731147, AU135554, AU138320, AV730235, AV732054, AV730285, AW896115, AA601495, BE065231, AU137259, AW902130, BE082759, AW818223, AW902131, BF338151, AW935656, AL138221, BE065242, BG120864, AW992038, BE065240, AIS57245, BF959938, BF960892, BE065188, BE972565, BF929940, AA977057, BE065282, BE065411, BE065370, AI469147, BF679479, AU128307, BF962824, BE866484, BE895022, BE065281, AW939313, AW856804, AW391396, AW969095, AW876637, AL046030, AL157596, AA931987, AW973139, AW501852, BF673759, BE884897, AW235704, AV709805, AI824304, BF801731, AI703258, BE065317, AW936927, AI198511, BE065404, AW992839, BF895153, BF213418, AI860789, AA493718, BF755156, AA682353, AV730846, BE206708, AL120117, BE154234, BF964256, AA847690, BE080185, N29555, BE083044, AA504616, AL039823, AA773326, AA20526, AV731907, AA435704, AV731659, AA420867, AA595827, BF838226, AA205322, BF755154, BF736812, AL046784, AV732111, AA420593, AA255512, BF948215, BE161681, BF962926, BE019645, AW902050, AA403229, BF759242, BF836355, AW855823, AW857254, BE065399, AA528530, BG011673, AW969925, BE674204, AI133053, BF881931, BE972284, BE065409, BE065286, AA524643, BF802807, BF577152, AA181487, AA525013, AW841726, AW863794, AI114511, AU130023, AW856359, AW853787, BF929776, AA491346, AA554810, BE612443, AW898792, AA194957, AI026925, BE070339, BE065106, W03937, AW890245, AV730003, AW850791, BF831226, AI624655, BE891251, BF815609, AW900219, AA169141, AA147639, BE065118, BE154143, AW996889, N70891, AV730460, AW886409, BE166585, AA761416, AI888639, AA632808, T71060, AA457599, AA218879, AA457601, AV749976, AW893002, BE086961, AC008496.5, AF229557.1, AL022577.1, AL136966.27, U72789.1, AC025447.4, AC004842.2, AL035696.14, AL512374.1, AC018842.5, AC068722.6, X75349.1, AL079303.3, AC090004.1, AC016731.7, AL512272.15, AP001825.4, AL161743.20, AL035087.20, AC010368.4, AC009046.4, AL137804.7, AC005823.1, Z84487.2, AL390208.17, AF044083.1, AC009502.4, AL024507.7, AC016689.3, AC010528.8, AC069462.2, AL136961.19, AP003467.2, AC016716.6, AL139115.5, AL121787.22, AC007970.3, AC002429.1, AL360272.23, AP002088.2, AL031446.7, AL034399.6, AC026436.3, AC010590.7, AL390060.14, AL139106.12, AL445584.16, AC004792.1, AC013429.12, Z71187.1, AL158850.8, AC009975.9, AL355345.13, AC090883.1, AL008713.1, AL139277.7, AC007483.7, AC027125.4, AC025442.5, AL049734.11, AL450338.5, AC009362.8, AL032362.1,

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HPFCI36	265	855966	1 - 865	15 - 879	AL516624, AW967335, AI346493, BF969871, AI379068, AW813968, AI435632, AW439597, AA160513, AA111896, AI129000, AI803023, AI587653, AI247913, AW080897, AA111878, BF197837, T58186, H04232, W07286, BE243262, BG165835, AA046003, AW028757, BE882257, BE393612, AA357180, AA085677, AA085834, AA621577, R36594, BF733978, AI014838, AL536330, AV753531, AV751871, R36593, AV752854, AW605869, AA341976, T58072, AW955926, AA576671, BF825158, BF245058, AL527071, AI367586, N79788, AA321931, AI566375, AI709192, AW379008, AA441898, AK000452. 1.
HPJBU43	266	862058	1 - 561	15 - 575	AA180278, AW814395, AW840475, AW840411, AW840473, AW840407, AW840402, AW840465, AW840410, AW840408, AW840466, AW840412, AW840471, AU119289, AW840406, BE797641, AA584638, AI922061, AW840474, AW840500, AI936549, AW840576, AW977443, AA501775, T03028,

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HPMBX22	267	702012	1 - 440	15 - 454	<p>BF513375, AI691035, BE856745, BE504702, AA811266, AA504621, AI569223, AI990010, AI984591, AI312945, AW188216, AU151786, AI826803, AA814187, AI951348, AA481199, AA740828, AI692671, AA457403, AW080568, AA115461, AA164487, AI808045, BE858405, H96862, AA164409, AI219805, AA169281, AI672331, AA164493, AI222468, AA287650, W67151, AW613600, BF033353, AI619506, AA765102, AW771812, AA173414, AA173443, BE748892, R31031, AA075225, BF195275, BE865502, AI978796, AA165266, AA054507, R76400, AA761126, AA173439, BE565131, R366666, R41825, AA040399, AI885599, AA076083, H03481, AI767909, BF028590, F08950, BE565650, AA328319, AA115066, BF033188, H73483, BG252418, BG166939, AI538212, AI690306, AW873763, AI474937,</p>



HPMCJ84	268	562779	1 - 774	15 - 788	AA768360, AA173504, AA743335, Z39814, R25164, AI680571, AA736761, BE962744, W81230, AL049970.1, AF081567.1, AP002360.4, AK001522.1, AC006369. 3. AW275432, AA557945, AA410788, AI355246, AV758722, AL041375, BF681222, AW963463, AI278972, AI687343, AV717715, AW872736, AI064918, AA525753, AV695953, AW969824, AA856841, BG180320, AW272815, AL121039, AI702049, AI223626, AW238712, AV760014, AI923052, BE155951, AI926102, AI572680, AI797998, AI141130, AA809125, AI802804, AW327852, BF112174, AW023111, AV718585, AU147162, BF814183, AI254770, AW270385, AU146498, AV718485, AV762982, AL042230, AA808875, AI628859, AA456937, BE090413, BF920612, AV695478, AA730305, AA084609, AA578472, AV762633, AA127426, AV758903, AL040374, AI287766, AA533054, BF530611, AI056177, AW148821, AV711203, AA297961, AI523205, AI267356, AW021674, AA515048, AW501278, D44672, BF529925, W96522, BF940118, AI053398, AW439703, AL041894, AW969743, AW856329, AL048060, AV762430, AI253987, AA489390, AI537995, AW105463, AA515924, AW020088, AI291439, BF725844, BE501670, AW778780, AI537995, AI536858, AI279417, AI267450, AI130709, BF828756, AA631497, AA610433, AL045077, AA708322, R97281, BE077105, AV759295, AL036665, AA634209, AW474152, AI280535, AV754716, AI251429, AA564256, AI609992, AA904211, AA064961, AA713705, BF805088, BF857849, BE328286, AW272640, H27788, AA827231, BF525663, AI814682, AL037632, AI150131, BF111477, AI521525, AW975010, AA441810, AI421755, BF852885, AA297776, BG231195, AW849714, AW572140, BF589824, AV761989, AW089550, AW270256, AI569401, BG166570, AI471455, AA664126, BF034649, BF804385, AA581240, AI065031, AA595661, AI307201, AW148775, AI499954, AI192440, BG222214, AW779609, AP001711.1, AL109976.23, AF168787.1, AC022415.5, AB023049.1, AC011811.42, AC004645.1, AC008752.6, AL122035.6, AC009412.6, AL136179.15, AC078818.19, AL109758.2, AL117381.32, AL356299.16, AC009220.10, AC009269.6, U72788.1, AC012476.8, AL117380.28, AC005746.1, AC006111.3, AC034251.5, AL136097.10, AP000501.1, AC006540.2, AL022327.17, AC005578.1, AC005015.2, AL109797.18, AC009120.8, AP000563.1, AL159168.15, AL031659.9, AL136312.11, AC007533.2, AC020558.4, AC005011.2, AL353708.10, AC011475.6, AC007991.7, AC087311.22, AC004383.1, BC008600.1, AJ400879.1, AL121653.2, AC068726.5, Z93023.1, AC002350.1, AC004491.1, AL138688.27, AC025168.7, AL133465.30, AP002906.2, AC004069.1, AC019227.4, AC002365.1, AC006449.19, AP000211.1, AP000133.1, AC011462.4, AL133211.9, AC002470.17, AC009244.24, AC004824.3, AC020663.1, AC016894.7, AC017004.4, AL139109.14, AF001550.1, AC006138.1, AC012627.4, AP000359.1, AF038458.1, AC008753.8, AC005146.1, L78833.1, AF317635.1, AC020931.5, AC022382.3, AC010553.6, AC024076.4, AC005412.6, AP001725.1, Z82172.2, AF196779.1, AL355997.10, Z93015.9, AC004156.1, AL390838.26, AC068799.14, AL138810.10, AJ298105.1, AL023879.1, AC007653.5, AL161670.4, AC012306.11, AC009314.4, AC073492.18, AC006509.15, AC008545.3, Z82201.1, AC006057.5, AL096703.14, AL136000.4, AL121754.18, AL021808.1, AC006312.8, AC044797.5, AC009131.6, AL139321.28, AC002477.1, AC005328.1, AP000513.1, AC006071.1, AP001717.1, AC005591.1, AL034420.16,
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HPMCV30	269	612870	1 - 894	15 - 908	<p>BG122182, BG034611, BE548730, BG110667, AW205272, AI800593, AI802988, F25189, AI740610, N23684, AW470648, AL120942, BF530954, AA890692, AI352429, AI634593, BG060184, AA554454, BG255820, AU145072, AW026128, BF431915, AI937808, AA93782, BF436462, AI826416, AI362153, AW071745, BF345276, BG107551, F28025, AA629269, AV762395, BF527699, AI216789, BG059451, N33439, AI362065, F37490, AI721014, AW874543, D52077, BE208411, AL042101, F25151, AI144207, AI423120, AA229607, F24889, F20765, AV761362, F30834, R84504, T27765, AV763971, AW006041, AI334443, BF668217, AL119691, AV763418, BF766630, AU147922, BG060172, AA523503, AW975164, AI720758, AA302029, AV759935, BF241967, BF677892, AF177861, AV763540, BF477449, AI284640, AV744105, AV761489, AI061361, AI904894, AL046409, BF982691, AI053445, AV744733, AI865213, AV762111, AV763255, AV735370, BF984558, AV741390, AI963720, F25232, AV761786, BG249643, AV759274, BF674369, AI289199, BF475381, AI679782, AI138455, AV762098, BF919090, AI500671, BF918590, AI004246, AA581903, F16559, AI306630, AI291821, AI792287, AI284007, AW193265, BF793766, AA703891, BF792268, AI431303, AI708009, AW274349, AW970571, AW303196, AI252506, BF701281, AV762826, AA302020, AL041690, AI613280, AV682003, AA501614, AL037910, AI370475, AW473163, AV702609, AV706237, AV763401, AI133164, BF915839, F19506, BG230879, AA954712, AW301350, AV760937, AV763354, AA308136, AF330238, BF337291, AA374320, AL044940, AA320811, AV758722, AW472872, AW438643, AI345654, AW021583, AV762397, AW265393, AV762139, AA469451, AI350211, AW075979,</p>

					<p> AW406447, AW662543, AA872171, AV759967, AV713291, AW500125, AW515448, AW504485, AI623899, AW872676, BF681619, AI281881, AW088846, AI281903, AW974109, AW021207, AL046205, AL045709, AI418972, AV710066, AI270117, AV762505, AV764307, AI272314, AI273107, AA491814, AW407578, AI890348, AV762064, AA490183, AV7626827, AV760057, AW276435, AA523497, AV763670, BF725347, AI343143, AV761843, AI754253, AV762009, AI927380, AA521323, AA494038, AI696962, AW327868, AI345681, AI345675, AW338086, AV761925, AV703682, AI471572, AV658688, AW576287, AW302013, AW162049, AI246119, AA720702, AV762050, AW963497, AC005517.7, Z11692.1, AL049780.4, AL135928.6, AC008372.6, D83989.1, AC009228.4, AP000552.1, AF196969.1, AC004067.1, AC016620.6, AL139415.10, AL033529.25, AL133163.2, AL139113.21, AL031295.1, AC009055.2, AL445686.14, AC019046.4, AC008543.7, AC009131.6, X55926.1, AL031296.1, AL445205.14, AC012076.4, AL121989.12, AL359091.10, AC009077.7, AL049759.10, AP002007.4, X54175.1, AL449209.2, AL034405.16, AL158207.15, AC006312.8, AL133371.3, AC018751.30, AC005755.1, AC021999.4, AC020754.4, AC003049.1, AC009996.7, AL355922.4, AC009516.19, AL137792.11, AL590031.6, AL590762.1, AL121653.2, Z99127.1, AF129756.1, AC005701.1, AC018755.3, AL353716.18, AC011495.6, AC023490.5, AC006160.9, AL161937.13, AL118520.26, AC007546.5, AF053356.1, AC005261.1, AL355916.2, AL158055.12, AL513008.14, AC006077.1, Z85986.1, AL049776.3, AL139045.12, AL161743.20, AB060227.1, AC004805.1, AL121601.13, AL137784.14, AL109935.39, Z82190.1, AC005821.1, AL034550.31, AF015148.1, AL117328.5, AC005740.1, X53550.1, AC006334.3, AC002544.1, AL356756.4, AC078818.19, AC004909.2, AP000556.2, AC078962.30, AL109804.41, AL118556.4, AL133347.28, AC026882.5, AL391827.18, AL354932.26, AC011514.3, AC012309.7, AL136418.4, AL139054.1, AL356378.17, X54181.1, AC003043.1, AL138720.19, AC007055.3, AL096793.20, AL137073.13, AC005841.3, AL133545.10, AC002300.1, AP001760.1, AL353738.16, AC004068.1, AL121808.4, AC005484.2, AC003684.1, AC005832.1, AP000339.1, AC006211.1, U67221.1, AL160269.14, AL034417.14, AC084865.2, AC002350.1, AL161896.16, AF077058.1, AC027129.5, AC010271.6, AL161626.20, AL450487.17, M19997.1, U57007.1, AL133458.19, AL355136.19, AL109921.21, AC003101.1, AC008132.35, AC005064.3, AC008440.8, AL451107.6, AL121825.19, AC007432.9, AC004873.3, AC005324.1, AC008747.5, AL139109.14, AL138724.12, AL161672.13, AC020898.5, AL157951.5, X51466.1, AC024082.6, AC007405.6, AL359235.3, AL135924.11, AC005288.1, AC025435.5, AC005694.3, AL132713.11, AL355499.15, AL008715.1, AF001550.1, AL139809.16, Z82180.19, AC012330.8, AL024498.12, AL136992.22, AC023491.21, AL160471.5, AP001732.1, AP000474.2, AL031120.1, AL139317.5, AL034423.21, AC009137.6, AP001725.1, AP000514.1, AC002351.1, AL132768.15, AC025593.5, AC003036.1, AC073651.23, AL117694.5, AL158040.13, AC007981.46, AL138976.5, AL137068.10, AL122058.19, AL359644.10, AL353579.17, AL031315.1, AF334404.1, AL161444.18, AC009309.4, AL022097.1, AL445664.14, AC012444.9, AP000558.1, AC000052.16, AC005887.3, AC002418.1, AC078994.3, AC002470.17, AP000504.1, AL031659.9, </p>
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					AC004386.1, AP000356.1, AL391833.10, M37551.1, AC009244.24, AF015151.1, AL390239.16, AL020993.1, AL008721.1, Z97832.11, Y18000.1, AC015541.21, AC026162.5, AC005020.5, AP001426.2, AC005041.2, AC005251.1, AC018816.5, Z97055.1, AF181897.1, AC011473.4, AL135978.4, AC005598.6, AC006251.3, AC004019.20, AC008760.6, AL391262.3, AC005179.1, AC025265.21, AC018641.3, AC034242.5, AL109963.4, AL035448.29, AC024085.5, AL023879.1, AL163201.2, AC005274.1, AL034380.26, AC011477.5, AC002310.1.
HPMFH77	270	702014	1 - 1877	15 - 1891	BF969970, BG253932, BE857961, AI185063, AA985520, H97907, N70065, AA503843, N68939, W94388, AA829801, AA349438, W00572, AI301208, AA349459, R23765, BF813707, R23718, AI129242, H97073, H47246, AI382737, BF818365, AW027760, AW027780, W74636, AI471120, AL042488, BF932339, BF891282, AI401774, BE859019, AA775471, AI685740, AL356095.11, AC007270.2, AL139100.9, AL078600.15.
HPQCC53	271	570821	1 - 420	15 - 434	AW968611, AI821399, T89649, AA465192, T89301, C16196, AA513285, AA513290, H88380, AW516458, AA598873, AI368654, AA935145, AA225168, AI494601, BE328740, H98112, AW118230, AA130535, N31853, AI762876, AI868522, H88527, BE440187, BF887073, BF508429, BF154515, BF750262, BF750261, BF750977, BF750099, AA216401, BF749988, BF750976, BF750257, BF748629, BF750038, BF750095, AA730383, BF750259, BF750975, BF750102, AA225686, BF749539, C00684, AC005070.1, AC004943.1, BC000007.1, AF11112.1, AL137222.17.
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HRADA42	275	827302	1 - 1121	15 - 1135	BG167431, AI870419, BF794745, BF212001, AI379833, AA894530, AI339336, AI336165, AW173013, BF688231, BE546835, AW615315, BG029651, AI660120, BE793058, AI961630, BG024470, AI418065, AA946777, AI697018, AW629846, BE538634, BF694672, AA126483, AW957695, AA948109, BE565388, AA864307, AI281293, AI124079, W58372, AI372055, AA918864, AI284979, AA961355, BF245466, AW627534, AI018252, AI804228, AA115687, AI123356, AA460235, AA938579, AA806449, BF667170, AI191797, BF218360, BF211069, BF666624, AI201697, BE789077, AW958886, BE888833, BE566320, BF678487, AA181956, AI280166, BF701292, AA187579, AI476152, AA975500, AI262806, AA633371, T86966, BF027457, AA670154, BE858489, N54918, AI285113, AI282777, AA928294, BF184831, AA856633, AA554905, AA952898, AA939258, BF245493, BE565724, H01916, H04478, BF029426, AA358260, AA283086, AI498851, AA070685, BF209151, BE252410, W04639, AA503091, D20722, AI473325, N78134, BF207942, AA553782, BF477790, BE302428, AA383311, BE568842, W31735, AI718566, BF695644, T56012, BF239325, N21275, BF696213, BE897499, AA651925, H78232, AA383310, AI583297, BF694034, AA296522, R70784, N40501, AA282901, T31842,

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HRADN25	277	800628	1 - 1211	15 - 1225	BF970417, BE871509, BF794109, AL526454, BE613934, BE905773, BF530960, AI911227, BG177658,

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HRDDQ39	280	840405	1 - 762	15 - 776	A A564252, AV763026, AV763058, AI499954, AI654738, BF763954, AI066646, AW813668, AI537020, AI801505, AI491765, AI251576, AW502796, AW272294, AA935409, AI040051, AI306232, AA503298, BE062545, AA225406, AI583466, AW274191, AI755202, BF771774, AW962251, AI635028, AV764259, AC008073.4, AC020604.9, U95740.1, AB020867.1, AF001552.1, AL049712.12, AC025168.7, AL512347.14, AC012469.9, AC007066.4, AC002996.1, AP003439.2, AL357752.19, AC073273.9, AC008372.6, AP001883.5, AC004973.1, AC013264.4, AL163285.2, AC073657.5, AC009516.19, AC012284.5, AL031230.1, AC005034.1, AC012476.8, AP002815.3, AC011485.6, AL365338.17, AL160397.17, AL008635.1, AL158830.17, AL033518.14, AC007172.6, AL391065.6, AC005768.17, AC007425.16, AL031123.14, AC005911.6, AC0090947.1, AL157838.24, AL591398.2, AC009756.9, AC009274.9, AC006600.4, AC007748.2, AF312915.1, Z99716.4, AC008733.7, Z83822.1, AC004675.1, AL121753.30, AL121754.18, AL109804.41, AC006511.5, AC005157.1, AL133324.13, AC006480.3, AL080243.21, AF088219.1, AC004887.2, AL139353.3, AC002563.1, AC006435.7, AC005081.3, AL160236.4, AC005859.1, AC010651.7, AC022414.6, AC025679.4, AP001752.1, AL442167.1, AC018738.4, AL031685.18, AL352978.6, AC025262.27, AP000557.2, AC012320.6, AL133229.40, AL031311.1, AC008440.8, AC003962.1, AL034372.33, AL133295.16, Z93020.1, AC004209.1, AL078581.11, AC010654.8, AC007226.3, AL356503.18, AP001922.4, AC010789.9, AC018690.5, AF168787.1, AL080314.29, AC011510.7, AE000658.1, AL160492.5, AL133244.1, AL117380.28, AL161629.10, AC010320.9, AC002546.1, AP000692.1, AC011742.3, AC008720.6, AC005023.1, AC025588.1, AC004584.1, AC004848.1, AP001725.1, AF019413.1, AC005013.1, AC011443.6, AL121899.37, AC006449.19, AP001694.1, AL359682.4, AL109825.23, AC034240.4, AP000355.1, AC011473.4, AC008569.6, AC009570.13, AC007381.3, AL365295.4, U91321.1, AC007363.3, AC009502.4, AL157882.5, AC006130.1, AL445201.14, AL137061.12, AL135818.3, AD000092.1, AL121578.1, AL035404.20, AP000513.1, AC069548.4, U91323.1, AC008507.8, AC005747.1, AC005071.2, AC009503.3, AL121653.2, AL359644.10, AL031622.1, AL031659.9, AC004526.1, AC010102.3, AC006270.1, AC021752.5, AC068319.4, AF031078.1, AP003357.2, AC008511.6, AC078846.2, AL445184.11, AC009275.6, AC009194.8, AF030876.1, AC018663.3, Z84474.1, AC008556.5, AC002350.1, AC010543.8, AC003108.1, AC007276.3, AI003147.1, AC008764.7, AC015982.9, AL049830.3, AF003529.1, AL080239.11, AC020931.5, AC004125.1, AL391827.18, AC010150.3, AC005043.2, AL137222.17, AC011005.7, AC020750.3, AC004859.2, AP000356.1, AF001549.1, Z94801.1, AC005914.1, AL133342.14, AC007308.13, AL355836.3, AC009953.4, AC005138.1, AC008493.4, AC006116.1, AP001052.1, AL122001.32, AL139100.9, AP001732.1, AC009137.6, AL035450.1, AC003037.1, AC006042.2, Z84484.1, AC004089.25, AL357519.19, AC002312.1, AC026368.37, AL449223.7, AL359695.6, AL022159.1, AC009955.4, AF279660.2, AC008616.6, AL139230.25, AC005952.1, AC006443.1, AL121586.31, AC008551.5, AL035367.5, AL133245.2, AL354720.14, AC005740.1, AC023114.5, AC007318.4, AC090951.1, AC066597.4, AC003049.1, AC008821.5, AL162571.9, AC019171.4, AL136162.17, AC022083.6.
HRDER22	281	688056	1 - 529	15 - 543	BF727044, AI748813, AI694426, AU148346, AI860331, AW206751, HI19708, AI368623, BF685348,

HRDFK37	282	840381	1 - 714	15 - 728	BF061078, C15772, AW973165, F22520, F29231, F36814, H67240, AA550873, A1871877, A1003318, AA883557, H81558, H20045, AA609021, A1679361, BF683664, A1216706, AW079340, D61490, A1867271, C01198, BF946359, A1215944, F18487, AA970129, BC003585.1, AK001252. 2.
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HRGBD54	283	828436	1 - 2287	15 - 2301	BG109258, A1022000, AW959317, BG034793, A1185806, BE253264, AW439445, BE350101, AW149835, BE710394, AU126065, W81656, A1873499, BE395876, W81655, AA831308, A1912453, BE155482, AW579947, BE006021, BE155401, AW383523, A1932645, AW579942, AW383468,

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HSAVA08	284	580870	1 - 1047	15 - 1061	AA523633, BE562634, AI828787, AC008738.6, AC005722.1, AC020908.6, AC090942.1, AL035685.21, AL049843.18, AC027124.4, AC005089.2, AC084865.2, AC002465.1, AC034251.5, AC022211.5, AL050335.32, AC009123.6, AC005320.1, AC002365.1, U91323.1, AJ251973.1, Z95115.1, AL359792.3, AL133545.10, AC011444.5, Z95152.1, AC002378.1, AL139352.16, AL122035.6, AC006160.9, AL109825.23, AC005015.2, AL162430.15, AL033526.24, AP000697.1, AC005328.1, AC007907.2, AL353653.19, AC010463.6, AC007637.9, AL161779.32, AC008755.6, AC018644.6, AC002996.1, AP001712.1, AC005756.1, AC010363.6, AC005225.2, AC002544.1, AC002470.17, AC003684.1, AC011480.3, AC007277.2, AC010878.4, AC011491.5, AL022394.3, AC068799.14, AL137918.4, AP001726.1, AC006130.1, AL138827.16, AC073864.28, AL034420. 16.
HSAWN53	285	634697	1 - 335	15 - 349	AA865128, AI174766, AA047715, AW995665, AA702729, AW900503, N74072, AA584450, AW129249, AL079734, AW163293, AV733228, BE313883, AV709273, AA741028, AV733627, AA648990, BE827710, BE172296, AA738097, AL043289, AI250083, AV755512, T08298, AA454041, AV716360, AI147425, AL138228, AA724782, AI921328, AW468297, AL134242, BF832365, N71746, BE968438, AW023265, AI345294, AI732378, AV759518, AI811302, AC078889.20, AC005914.1, Z93930.10, AL390838.26, AC005393.1, AC073145.8, AL355096.4, AL160269.14, AC007465.4, AP001671.1, AF250324.1, AC009509.7, AC004682.1, AC000120.1, AL033523.14, AC025472.3, AC012170.6, AL158830.17, AC006112.2, AC007387.3, AC005670.1, AC004098.1, Z94161.5, AC004531.1, AC015853.8, AC004477.1, AC007036.3, AC019205.4, AC026881.6, AL138823.14, AC020647.9, AC008750.7, AC069277.5, AL050318.13, AC026179.5, AC003024.1, AC024154.2, AC067941.7, AL024498.12, AC006466.3, AL160492.5, AL031055.1, AP000240.1, AL589983.8,

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HSAWZ40	286	634000	1 - 1005	15 - 1019		AV730902, BE148579, AW593457, AL120258, AW961858, AW183914, AA724767, AW975579, AA630162, AA715979, BE062935, AW862584, AC007023.3, AC010293.5, AL139326.15, AC024564.4, AC010977.4, AL139095.15, AL118556.4, AC026421.3, AL034410.8, AC015592.6, AL157700.13, AC020637.9, AL445523.11, AL139034.20, AL391139.19, AC017037.10, AL357498.16, AC006343.2, AL512430.14, AC026787.4, AC008685.7, AP003112.1, AL353999.3, AC025765.5, AC003015.1, AP003111.1, AC008664.5, AC006477.3, AC008450.5, AL513328.12, AL023582.1, AL441985.9, AL360270.18, AL354750.12, AL451086.6, AC006928.15, L35657.1, AC012512.7, AL162414.11, AL159159.21, AC004147.1, AL391829.9, AC073542.4, AL391689.1, AP000751.4, AC068802.29, AC007488.15, Z68868.1, AL035424.7, AF044083.1, AL035562.14, AC090946.1, AL392084.6, AC020668.5, AC069462.2, AC007200.1, AL353136.21, AC006515.7, AL136992.22, AL049648.9, AC087070.2, AC087431.2, AL035422.12, AL031965.7, AL031012.1, AC079353.5, AC004021.1, AL035411.27, AC007345.5, AL158192.15, AC007128.2, AP000457.3, AL590426.6, AL391294.16, AC011716.7, AL031312.1, AC010884.10, AC019097.5, U78027.1, AL139112.9, AC003964.1, AF223391.1, AL109800.25, AC009399.5, AL121875.9, AC009753.5, AL356865.19, AC016526.6, AL359643.27, AC011593.8, AL096827.3, AP001669.1, AC005900.1, AP001609.1, AC008905.6, AC006236.1, AC008786.6, AL355052.3, AC010234.5, AL157397.13, AC009476.3, AL583856.6, AC004384.1, AC022419.5, AC008865.3, AC010348.4, AL139327.18, AC073927.9, AL031056.1, AC009501.3, AL096709.11, AL139101.13, AC004932.4, AC008550.4, AL353659.13, AC007179.3, AC026369.21, AC026797.3, AL449189.1, AL157827.17, AC022324.5, AL354831.18, AL353614.9, AL358612.8, AL354948.7, AC005612.1, AL359846.11, AC019227.4, AL357312.8, AC016576.7, AL442167.1, AL136363.4, Z82212.1, AL163285.2, Z83849.1, AL355382.6, AL590225.4, AC010458.5, AL049545.6, AL360232.24, AL512272.15, AC004014.1, AL591770.1, AL137017.9, AL359703.13, Z81311.1, AL158825.12, AC008833.5, AL096793.20, AC020549.4, AC026951.5, Z96074.4, AC010235.6, AC009721.9, AC006957.1, AL137028.9, AC009901.6, AL390027.11, AL021307.1, AL353739.4, AC007656.2, AC023426.29, Z78021.1, AL021997.1, AF095725.1, AP001699.1, AL357774.11, AL023877.1, AF052041.1, AL035078.32, AL357054.14, AC004415.1, AL355596.21, AL109938.8, AL160255.14, AP002791.3, AC040163.3, AL357912. 10.
HSDZM54	287	637870	1 - 540	15 - 554		AV729255, AL535959, AV726938, AV701879, AV729339, AV654282, AV725709, AV705433, AV702947, AV691890, AV662257, AV705443, AV706584, AV725529, AV728243, AI557222, AV726503, AV709039, AV692176, AV758197, BF942332, BG222560, BG222322, AV738071, AA469321, BE880733, AV717185, BE881230, BE879882, BE875275, BE876183, AI064816, BE877078, AA467922, AV724819, BE877083, BE877146, AL047841, AV653804, AV707611, AA468250, AA467983, AA467864, BE874475, AA657843, AA467872, BG223149, BG231240, AV727472, BE878467, AA533928, AV756682, BF942071, AV759063, AW128905, AV759547, AV721822,

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HSHAX04	288	812178	1 - 1273	15 - 1287	AL518245, AL513560, AL518244, AL527318, BE796445, BE729339, BE794797, BE729215, BF570366, BF969527, BE513213, BE797077, BE409736, AV715789, BE729781, BG165883, BF569872, BE730249, BF025786, BF971834, BE747502, BF974060, BF127469, BE394313, AI192460, BE277674, BE387113,

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HSHBF76	289	715838	1 - 1259	15 - 1273	AI198543, AW027453, BF569035, BF062076, BF056301, AI694380, AW771566, AI950836, AI769655, AI800526, AI765069, BE552071, AA708811, BE645418, BF983434, AW514312, BE870149, AI804763, AI193044, AI273413, BE840116, AW504874, AA156450, BF568737, AA678373, AW369915, AW071657, BG150349, AA143141, AW369859, AW369914, AW369917, N45126, AI143564, AW196425, AW369906, AA026661, AA147579, AI248731, AW176312, BE857715, AW378548, BE840067, BE840065, AW369858, W70056, R68010, C15009, AW960647, AA564420, AA534504, AW516592, BE696667, AW168286, AW027279, W70183, BF334843, AW631008, T49357, AI248547, AI909950, R68011, BF115265, AW369857, C15008, BF847503, AW316856, AA368406, BF054931, T24692, AI653377, AI762291, AA503862, C15912, AA143381, AW316788, AI891034, R73287, D80781, AI688643, AA370097, BF351644, W57620, BE502165, AW627705, BF513704, AI418942, AI767449, AA427668, BE673340, AI342555, AW748211, AI682534, AA513358, AA026709, AA333744, AI333618, BF939494, AI660050, AI291907, AI906801, AI906791, BC008335.1, AC009000.6, AC011472. 7.
HSKDR27	290	580874	1 - 748	15 - 762	AI984221, AI740960, AW015044, BF591015, W80440, AI141908, AA627626, AA969950, AI581286, AW613262, AW170703, AW073992, BF338322, AA480836, R52038, BF436470, AW074677, AA994760, BE219883, AI381244, BE677262, R52037, BE327304, R49984, AW304136, BE042923, R47846, AA359428, AI538725, AW836013, C00374, BE550516, AA887620, AW873686, BG107838, BE048302, H50794, AI961625, W79036, AF177941. 1.
HSLHG78	291	846148	1 - 1460	15 - 1474	BF109231, BF694636, AW135400, AW305037, AA173572, BE514897, BF673063, AW957220, AV726758, AI684646, BF439158, AW439538, AI400156, AA724787, AA419059, N20186, AA173186,

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HSLHX15	292	777861	1 - 641	15 - 655	<p>AW068913, AU147309, AW963838, Z21897, AV718844, AV724520, AV742001, AV720464, AV718681, AV720731, AV742667, AV722801, A1051434, D80219, D80253, AV743601, AW973447, AV700229, AV719000, AV701017, AV701443, D80227, AV718692, AV701248, AV723927, AV745080, AA704077, AV742720, AV701428, AV744934, AV701166, AV700889, AV743008, D51250, AV718489, AV701043, AV741012, AV719783, AV699447, D80240, D59275, AV721784, AV745724, AV744773, T35625, AV701125, AV701332, AV744771, AV720607, AV699927, AV701261, AV701154, AV701012, AV744768, AV740535, D80043, AV745723, AV743654, AV701118, AV737584, D80210, AV701163,</p>